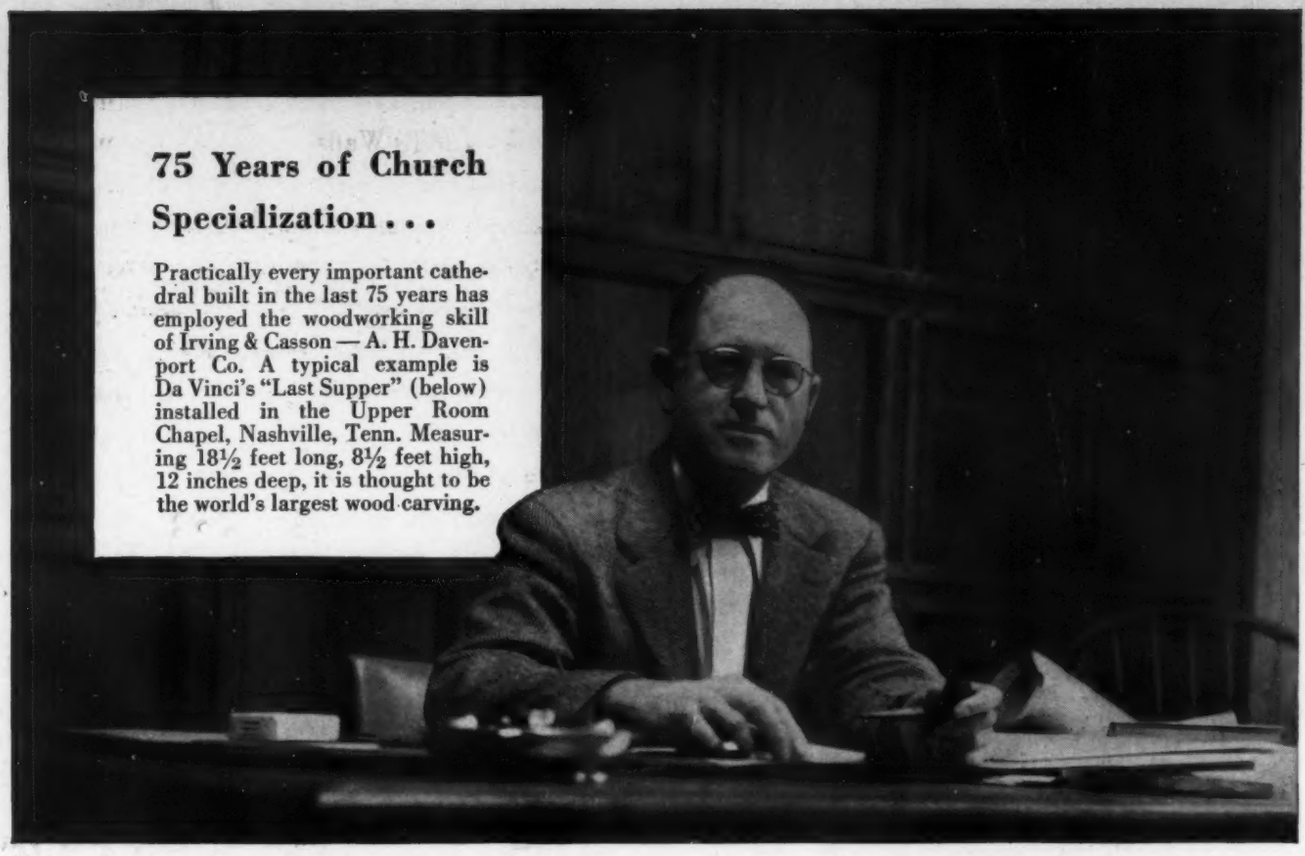
ARCHITECTURAL RECORD

BUILDING TYPES STUDY

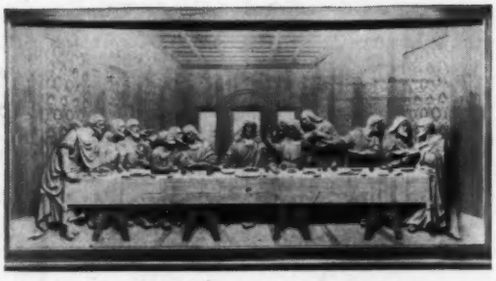
SECONDARY SCHOOLS 227

OCTOBER 1955



75 Years of Church Specialization . . .

Practically every important cathedral built in the last 75 years has employed the woodworking skill of Irving & Casson — A. H. Davenport Co. A typical example is Da Vinci's "Last Supper" (below) installed in the Upper Room Chapel, Nashville, Tenn. Measuring 18½ feet long, 8½ feet high, 12 inches deep, it is thought to be the world's largest wood carving.



Nine carvers, working in the Cambridge plant, spent almost a year in the completion of this reproduction of Da Vinci's work.

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Manufacturing, Engineering and Installation of Automatic Sprinklers since 1878

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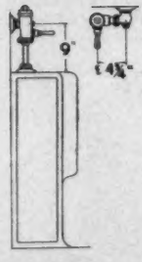

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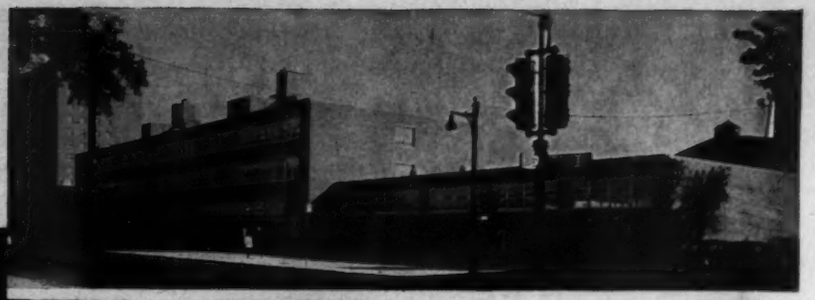
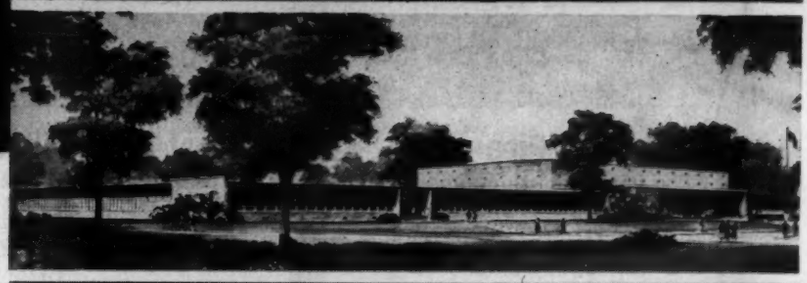


William Dick School, Philadelphia, Pa.
Max W. Bieberbach, Architect & Engineer
Miele Plumbing & Heating Co., Plumbing Contractor



Central High School, York, Pa.
Buchart Engineering Corp., Architects & Engineers
W. K. Hood and Associates, Mechanical Engineers
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Norman High School, Norman, Okla.
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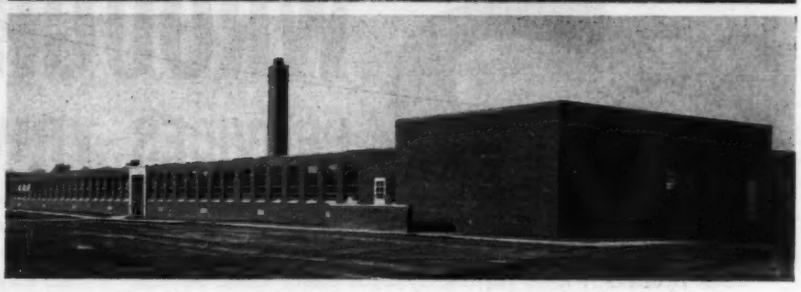

Renwood Elementary School, Parma, Ohio
Fulton, Krinsky & DeLaMotte, Architect
Weiss Heating & Plumbing Co., Plumbing Contractor
Grinnell Co., Plumbing Wholesaler

Martic Township Elementary School
Lancaster County, Pa.
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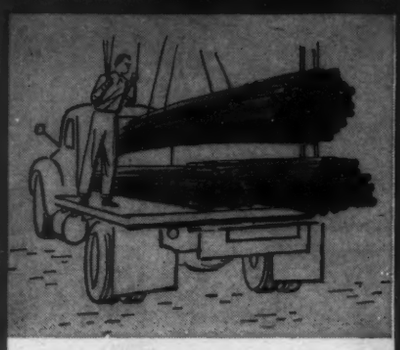
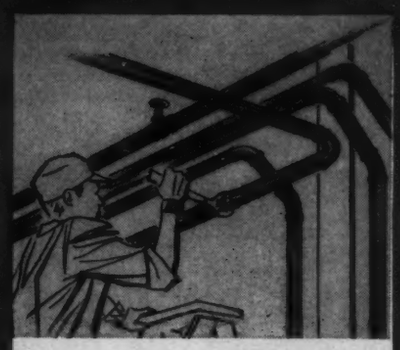


1. Cost of Pipe

The important thing about this cost is that it represents only *one small part* of the piping picture and should not establish the only pipe comparison guide.

2. Cost of Installation

This cost generally represents the *major part of the piping investment* and includes labor, fabrication, valves, fittings, covering, and overhead.



3. Cost of Maintenance

This is the money paid to keep the piping system in operation as long as the need for it exists. The amount spent depends largely on the quality of pipe used.

3 IMPORTANT COSTS THAT SHOW WHY WROUGHT IRON PIPE PROVIDES TRUE PIPING ECONOMY

This breakdown of piping system costs underscores the reasons why wrought iron pipe users enjoy maximum piping economy even though they pay more, *initially*. These users know that they buy an *installed piping system*, not just the pipe. And because the greatest cost of this installed piping system is in labor, valves, fittings, fabrication, covering, and overhead, the difference between the cost of the wrought iron installation and what a low-first-cost pipe installation would have been, shrinks to an insignificant amount in the cost of the *total piping contract*.

But still more important to the plans and pocketbooks of wrought iron pipe users is the Cost of Maintenance. One user put it this way. "A wrought iron installation is like having money in the bank." He was simply expressing wrought iron's longer service in terms of money saved in repairs, replacement, and maintenance. There's no doubt about it . . . when you consider the three costs, you can buy the best—wrought iron—and get a bargain at the same time.

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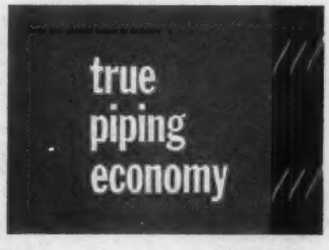

Write for Booklet

The booklet, *True Piping Economy*, gives detailed information on the cost facts presented here, plus many others. You will find it a valuable guide in placing pipe selection emphasis where it will profit you most.

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WROUGHT IRON

TUBULAR AND HOT ROLLED PRODUCTS

ELECTRIC FURNACE QUALITY STEEL PRODUCTS

ARCHITECTURAL RECORD

October 1955 Vol. 118 No. 4

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Five basic environmental influences — including view and the character

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of the community and neighboring houses — are expressed in this house with unusual clarity
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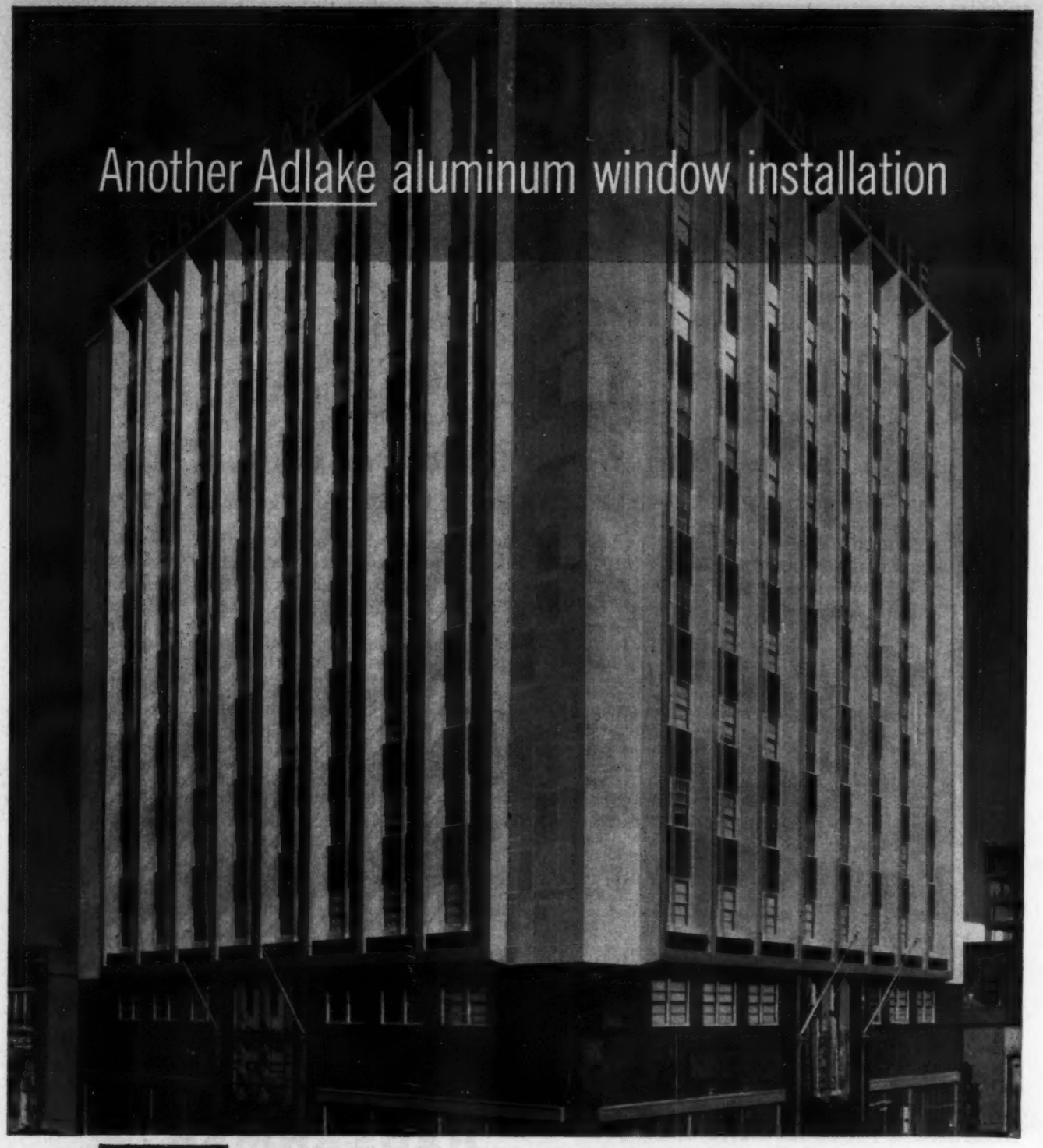

Gibraltar Life Insurance Company Building, Dallas, Texas. Architects: Thomas, Jameson & Merrill
General Contractor: J. W. Bateson Construction Co. Equipped with Adlake Double Hung Aluminum Window

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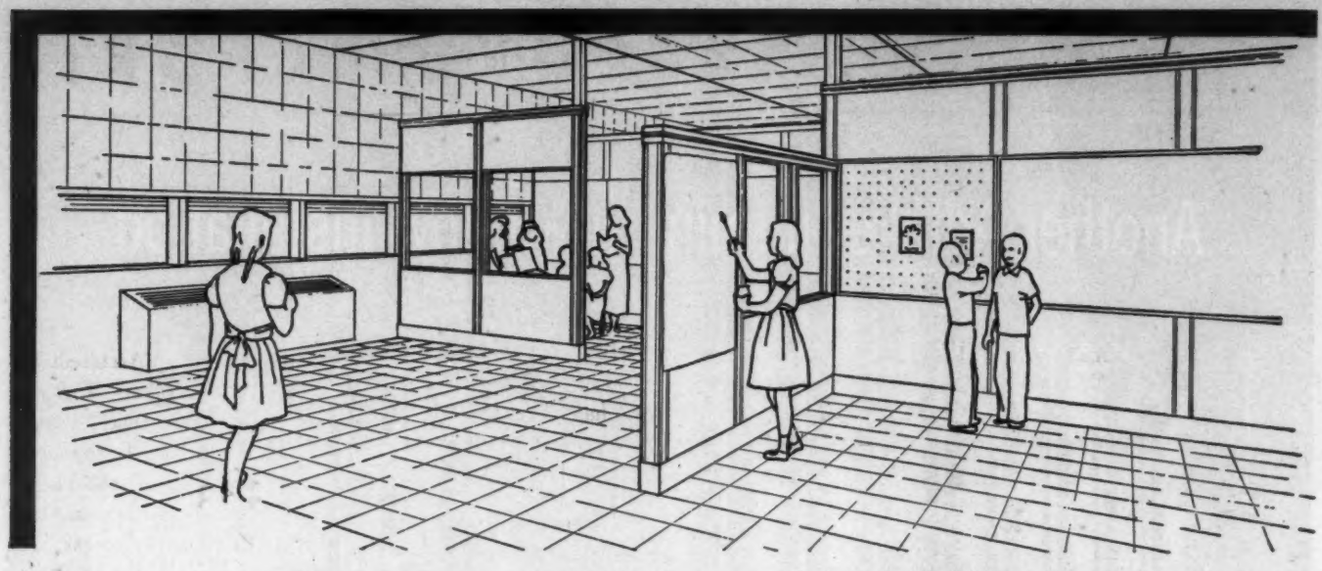

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THE RECORD REPORTS

PERSPECTIVES

HAIL THE CHIEF: A.I.A. President George Bain Cummings was made a chief of the Blackfeet Indian Tribe in impressive ceremonies held during last month's A.I.A. Northwest Regional Conference in Glacier National Park. Mr. Cummings was presented with a beautiful war bonnet and an Indian name which (in its English version, at least) may give some of his fellow architects pause: to the Blackfeet, he's Chief Rising Pencil Pusher.

ARCHITECTS WILL BE INTERESTED in the November issue of *House Beautiful*, which is devoted entirely to Frank Lloyd Wright, "the man who liberated architecture" (in the words of the title of the lead article by executive editor Joseph A. Barry). "The next America will be the age of great architecture," *House Beautiful* promised in its well-remembered April 1953 issue attacking "the cult of austerity" ("the product of Mies van der Rohe's cold, barren design and Le Corbusier's International Style") and what *House Beautiful* described as "the bullying tactics of the self-chosen élite who would dictate not only taste but a whole way of life." Well, it would appear from Mr. Barry's article not only that "the threat to the next America" has evaporated but that, in fact, the next America and the age of great architecture are (so soon!) arrived. Thus Mr. Barry: "Architecture (we'll risk stating it bluntly) is the great art of America and it has the greatest and most tempting possibilities for its practice. As the life of our people is the primary concern of our democratic philosophy, so architecture for that life is now the primary expression of our democratic culture. Not since the building of the Gothic cathedrals has this been quite so true for so many. What we are seeing in America is a return to the great, integrated periods before the Renaissance, when architecture was the controlling, dominant art." And Mr. Barry, describing Mr. Wright's sixty years of practice and preaching, says "Mr. Wright has triumphed." Mr. Barry notes (recalling the 1908 issue of ARCHITECTURAL RECORD devoted entirely to Mr. Wright's work) that he has never lacked recognition; "but only today might one say that Frank Lloyd Wright has triumphed, in the sense that his architectural philosophy has become a major part of our living culture, a fundamental part of the equipment with which our architects and builders solve the important problem of architecture for ways of life new to the world."

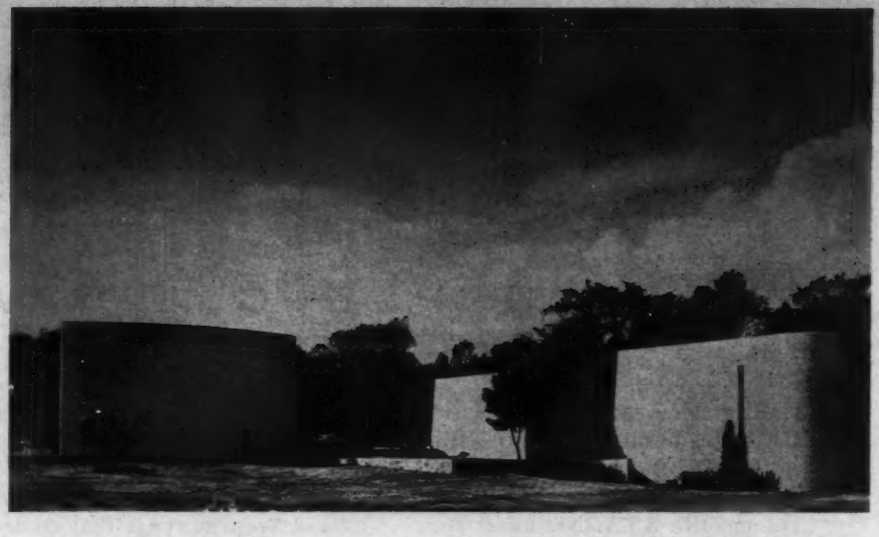
ANYBODY CAN PLAY: The Detroit Bar Association held the first "speechless" annual meeting in its 119-year history this year, and it was reported that attendance was fine. A humorous playlet written by one of the members as a substitute for the usual lengthy speech by a "distinguished" outsider depicted a meeting of a state bar committee to discuss a proposal for a guaranteed annual income for lawyers and similar absorbing topics. Some of them might be taken over verbatim by an architects' meeting — as, "How maximum can a minimum fee schedule get?" But the architectural profession could provide topics of its own still very much in the spirit of the lawyers' debate — "Should newspapers be permitted to credit architects when publishing photographs of their buildings?" "Must an architect accept a proffered Fellowship in the A.I.A. against his will?" "Should an architect increase the budget if his client insists?" – –etc.

AND THE TALK OF SPACE SATELLITES, and the recent discovery of what is believed to be a sizeable area of living vegetation on Mars, begins to make phrases like "international style" and "organic architecture" sound a trifle archaic. Coming up, perhaps — interstellar style and cosmic architecture?

OUR READERS WRITE: Architect Edgar I. Williams of New York, on Minoru Yamasaki's article "Toward an Architecture of Enjoyment" (August 1955, pages 142–149) — "His article is stirring because it is so unpretentious and honest. His four fallacies seem to me well put. An old fellow, one from the generation who passed on 'the morass of cluttered thinking,' might ask where have these young fellows been who now suddenly, almost naïvely, discover that joyousness is important in architecture. Charles McKim liked Renaissance architecture too. McKim showed his appreciation of the imponderable qualities of architecture as he fought so hard to revive the magnificence and spiritual qualities of Washington, D. C., which were being destroyed by another generation of 'practical' people. Of course, there can be no progress without invention, or to put it another way and quote Yamasaki, 'without it [originality] architecture . . . would die.' And further, unless a building reflects the ever changing life of today it contributes nothing to the forward march of architecture." . . . From Henry Hofmeister, on the fenestration study (April 1955, pages 198–216, and with special reference to pages 200–201) — "The concept of modular spacing was secondary at the time the original plans of RCA Building were first studied and laid out, with the spacing of proper sized elevator shafts, the elevator lobbies between, and allowance for structural columns and wind bracing; thus forming the core of the building. This established the 27 ft-6 in.-wide bays, and we also found this dimension worked out well, being practical in the versatility of subdividing the rental space for office occupancy. After the column spacing was determined, we then studied the fenestration and arrived at the three-window bay as being most suitable to a good solution."

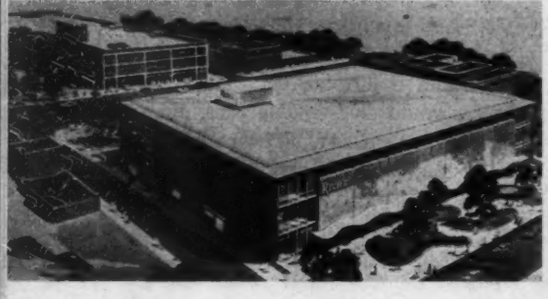
THE RECORD REPORTS

BUILDINGS IN THE NEWS



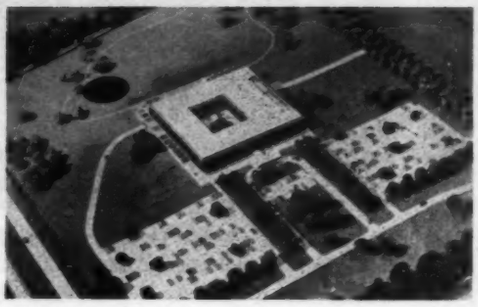
THREE CHAPELS, one for each of the three major religious faiths, comprise the unique interfaith center designed by architects Harrison and Abramovitz of New York for Brandeis University, Jewish-founded but nonsectarian institution at Waltham, Mass. The chapels, nearly completed when this photograph was taken, are of glazed brick, with glass at ends; they are built around a pool. Formal dedication will be held this month

CONRAD HILTON'S 29TH HOTEL opened in California in August just a few weeks after his 28th (the Istanbul Hilton — AR, July 1955, page 330) opened in Turkey. Not unexpectedly, the $16 million 450-room Beverly Hilton, its eight-and-a-half acre site a very expensive piece of real estate at the intersection of Wilshire and Santa Monica Boulevards in Beverly Hills, is described by Welton Beckett's proud client as "the most luxurious of the world's hotels." The building — its eight stories tower over its predominantly two-story surroundings — is, in plan, an irregular Y shape; sliding glass walls open on private balconies. Lavish use of color and of contemporary art forms keynote sumptuously uninstitutional interiors

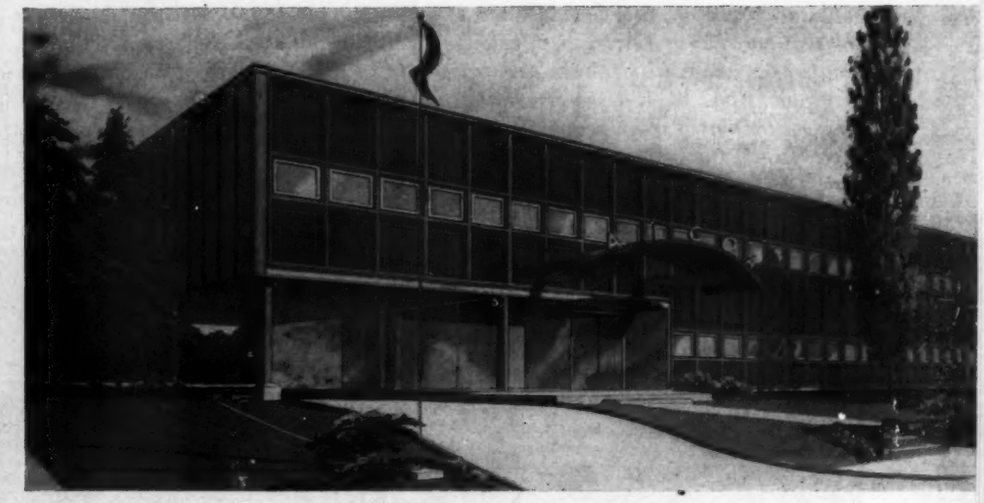


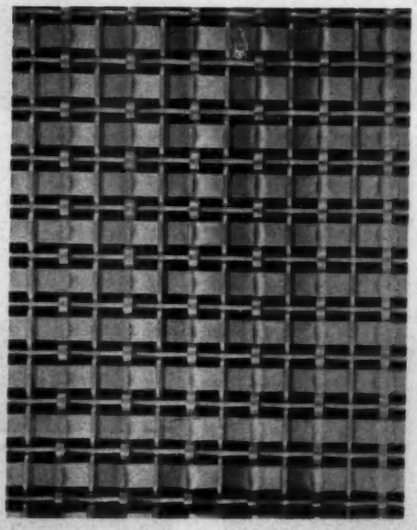
REGIONAL SHOPPING CENTER FOR CENTER CITY — Rich's Knoxville, the 89-year-old department store's first branch outside Atlanta, is designed to lure people of all income levels within a 41-county area in east Tennessee as well as to revitalize an area slightly west of what has been Knoxville's central shopping and business street. Architects Stevens & Wilkinson have made the two-block site an oasis of light, color and pleasant spaces, putting a four-story main building of glazed cherry-red brick, green tile and glass in a setting of parks and plazas; a warehouse and 450-car garage across the street are connected by tunnel to the store. Main facades are shown at right; rendering above shows relationship of two buildings

EXECUTIVE HEADQUARTERS OF REYNOLDS METALS is under way on a 40-acre site on the outskirts of Richmond. To accommodate approximately 1000 employes, with provision for future expansion of as much as 80 per cent, the building will cost an estimated $10 million and will, the company hopes, "demonstrate how aluminum can be used for economy, efficiency and beauty." East and west façades of the building will have varicolored aluminum louvres designed to open and shut automatically as the sun moves in its orbit; a six-ft aluminum sunshade will protect the windows at each floor level; walls will be gray tinted glass. Electric stairways will use aluminum for all exposed panels and deck covers. Architects: Skidmore, Owings & Merrill; general contractors, George A. Fuller



UNION CARBON AND CARBIDE'S executive headquarters will be built in the heart of Manhattan — 270 Park Avenue, site of the former Hotel Marguery — and not on the Westchester County land the corporation bought in 1952 tentatively for that purpose. Preliminary plans for a 41-story building to be occupied entirely — except for stores on the ground floor — by the corporation and its subsidiaries have been prepared by architects Skidmore, Owings & Merrill



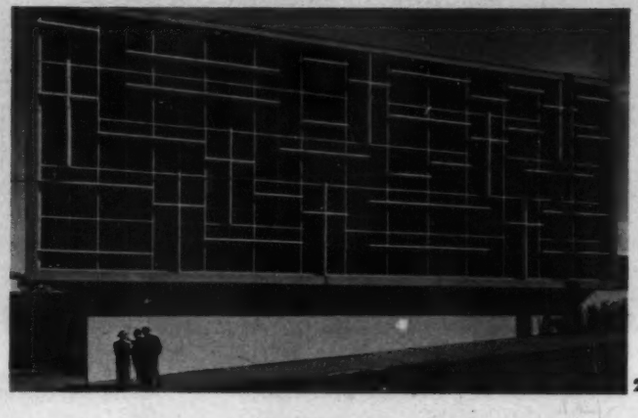


HEADQUARTERS FOR ALCOA's Atlanta sales organization will make extensive use of aluminum inside and outside the 102 by 61 ft two-story structure, but nowhere more strikingly than in an exterior application with a purely esthetic purpose — a gold aluminum mesh (close-up at left) woven of extruded aluminum bars and channels and composed of removable sections, suspended several inches from a curtain wall of electrochemically colored blue aluminum. This combination will make front and rear elevations; one end will be partially faced with Georgia marble, the other will be blue aluminum. Architects: Schell, Deeter & Stott of Pittsburgh; general contractors: George A. Fuller Co., associated with Van Winkle and Co.

(Continued from page 10)

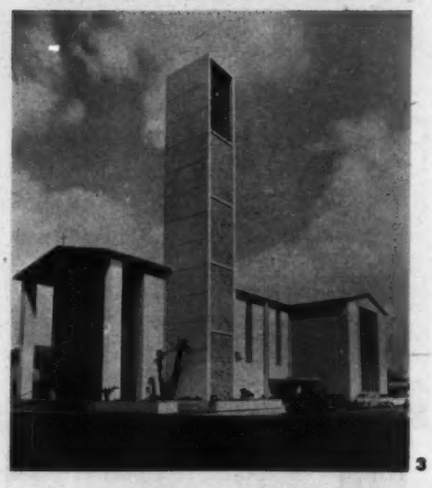
HONORS FOR CATHOLIC INSTITUTIONAL DESIGN

1



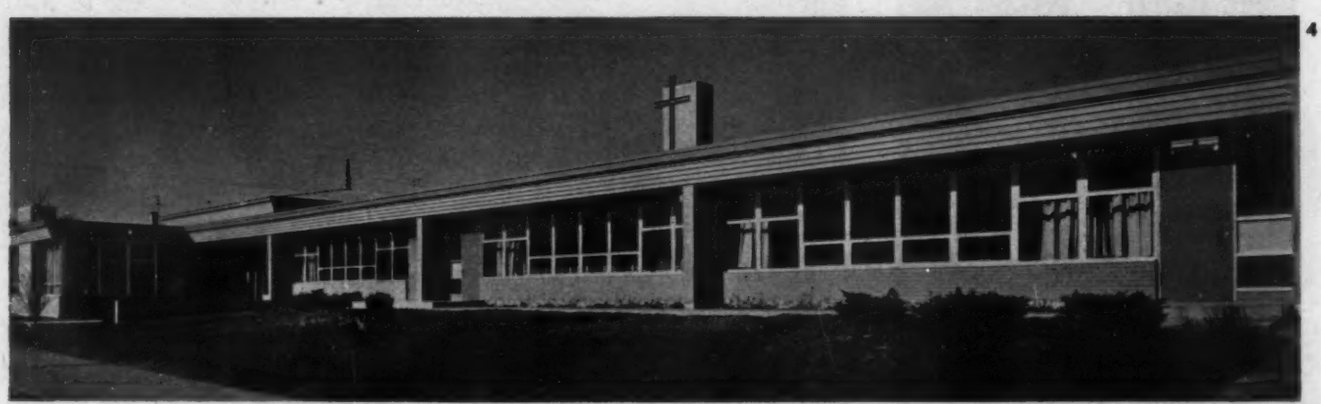
2

CHURCHES
having a capacity of 250 or more



3

The first sponsored professional architectural competition "for better Catholic institutional design" was conducted this year by the magazine Church Property Administration *in cooperation with the National Catholic Education Association. Award winners are shown on this page. 1. FIRST AWARD — St. Albert the Great Church, Compton, Cal.; Chaix and Johnson, architects. DISTINCTIVE DESIGN AWARDS — 2. Corpus Christi Church, San Francisco, Mario J. Ciampi, architect; 3. St. Brigid's Church, Los Angeles, Chaix and Johnson, architects; and (not shown) Church of the Assumption, Edmonton, Alta., W. R. Ussner, architect. 4. FIRST AWARD — St. Adrian's School, Chicago; Perkins & Will, architects. DISTINCTIVE DESIGN AWARDS — 5. Our Lady Help of Christians School, Abington, Pa., Nolen & Swinburne, architects; 6. St. Joseph's School, Columbia, S. C., G. Thomas Harmon, architect; 7. St. Francis of Assisi School, Riviera Beach, Fla., Frederick G. Seelmann, architect*



4

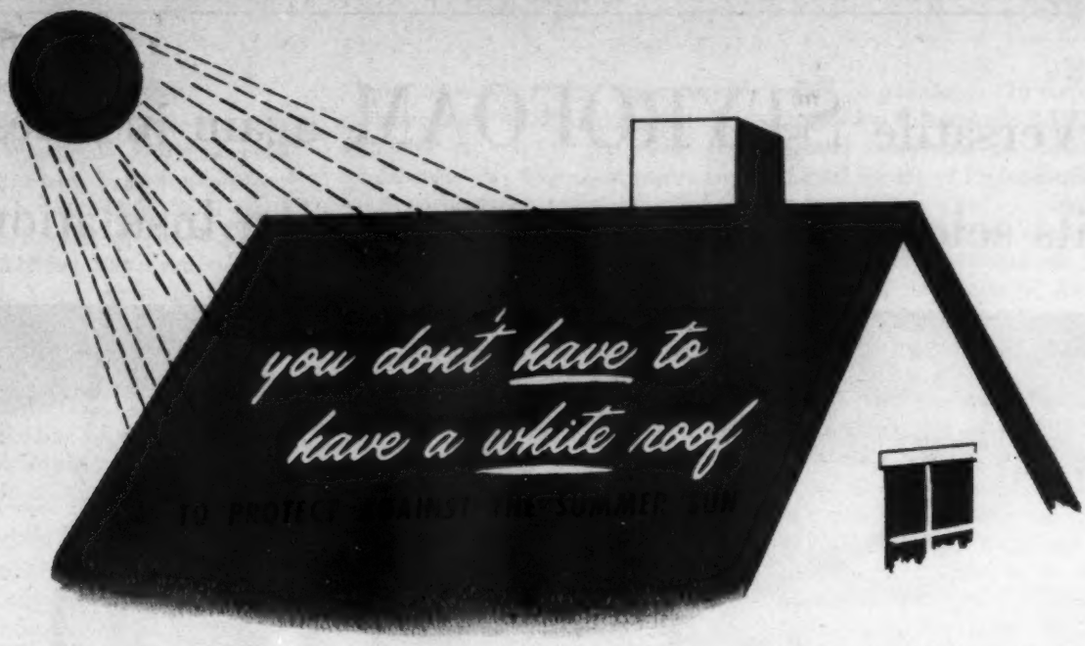
SCHOOLS
(elementary) having a capacity of not more than 400

5

6

7

(More news on page 15)



The total heat the summer sun pours down on a 1,000 sq. ft. roof of a house at noon on a clear day may run as high as 250,000 Btu's per hour. Some white shingles have been credited with the ability to reflect, OUTDOORS, about 55% of the sun's rays, yellow 35%, green 15%, red 14%, blue 5%, black 4%.

White shingles won't always stay white, don't always harmonize with the desired color-scheme, easily look soiled. So despite the greater efficiency of white (which is true only OUTDOORS), roofs may nevertheless be ANY color to harmonize with the building, its environment, and the tastes of its occupants, and still be considerably cooler inside than out; IF--- six (or even four) reflective spaces and reflective surfaces are installed beneath the roof.

The comfort and efficiency of this scientific combination, produced by 3 sheets of aluminum and 2 of fiber, air-spaced apart, is remarkable because of its effectiveness in repelling radiation which is responsible for about 93% of all *heat in-flow* down from the roof to the living quarters. The surfaces of the aluminum sheets reflect radiation with a 97% rate, and absorb and emit radiation at a rate of only 3%.

Since there is NO convection in down heat flow, and slight conduction thru the multiple, low density air spaces, a triple barrier to *heat in-flow* is raised.

In winter, too, this form of insulation is effective, because 55% to 70% of heat flow upwards through air space is by radiation. Convection, ranging to 45%, is retarded by the 3 aluminum sheets and also by the 2 fiber separators. In up heat flow, conduction is also slight because of air's low density.

The best shingles or most beautiful paint job on the exterior or interior, will not protect against peeling paint, timber rot, and crumbling plaster caused by destructive condensation..... The 6-reflective-space-aluminum-surface combination is almost completely impervious to water vapor and by its scientific construction minimizes condensation formation on or within it.

It is available in pre-fabricated form, ready to install, and is called Infra Insulation Type 6. **More than 250 million sq. ft. of INFRA has been installed in the past 10 years.**

How house-cooling systems can be made to cost less for installation and for operation by scientifically insulating buildings, is made graphically clear in an illustrated brochure *"Five top priorities for designing an air-conditioned house,"* a reprint of an article which originally appeared in "House & Home." We will send it free at our expense if you mail the coupon.

COST OF EDGE-TO-EDGE INFRA
Multiple Aluminum Insulation installed in new construction between wood joists, material and labor
Type 6-PS about 10¢ sq. ft.
Type 4-PS about 8¢ sq. ft.

Infra Insulation, Inc., 525 B'way., New York, N. Y.
Dept. R-10

Please send: "Five Top Priorities"

Name_____

Firm_____

Address_____

DOW

Versatile STYROFOAM again justifies its selection for heavy construction insulation

Central Christian Church, Elkhart, Indiana. Architect: Alvin O'Keefe, Plymouth, Indiana. Contractor: Fred. Wright, Elkhart, Indiana.

The exterior walls were specified to have 1" of Styrofoam between the face brick and concrete back-up block in this cavity wall construction. The back-up block was laid in a random ashlar pattern, thus forming the interior wall surface.

Its maximum combination of desirable properties writes STYROFOAM® into job specifications all over the country

Styrofoam, Dow expanded polystyrene, has won wide use as perimeter insulation, and as an insulation-plaster base on masonry walls. Its combination of the most desirable properties for insulation pays off in long service life, economy and outstanding efficiency. A quick check list: Styrofoam has a low "K" factor that stays low . . . is highly resistant to rot, mold, deterioration . . . has high structural strength . . . won't absorb water even by capillarity because of its non-interconnecting cellular structure . . . speeds installation because it's light, clean, easy to handle.

Styrofoam comes in convenient 3′ and 9′ lengths which can be cut into desired shapes and sizes with ordinary tools. It's available in a variety of standard thicknesses and widths, and is easily bonded to other materials.

If you're looking for an outstanding insulation for perimeter use, for low-temperature rooms, or for use as a low-temperature pipe covering, investigate Styrofoam today. Write Dow Sales Department **PL 568J-1** or contact your local Styrofoam distributor. THE DOW CHEMICAL COMPANY, Midland, Michigan.

you can depend on DOW PLASTICS

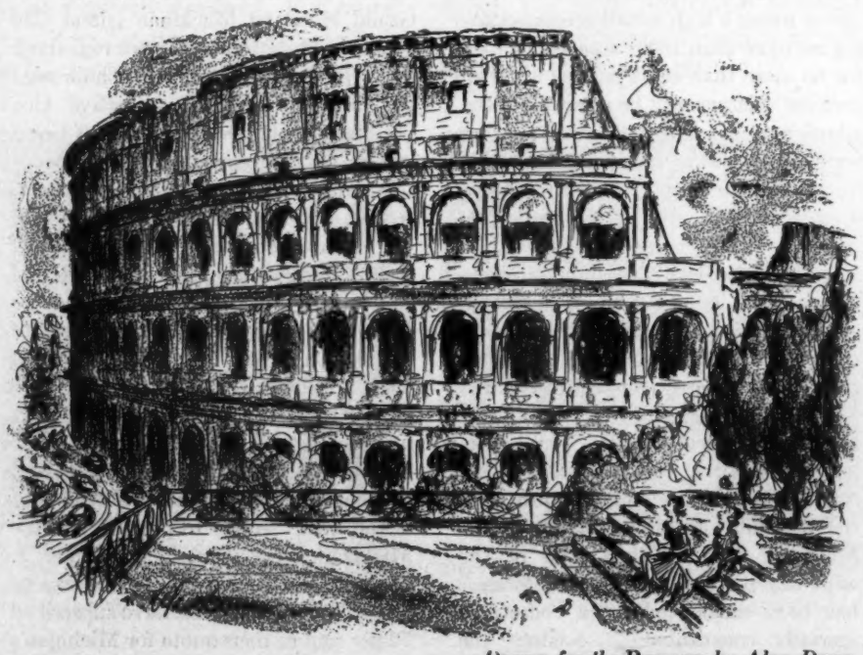
DOW

The State of Construction

New records continued to be the order of the day. When F. W. Dodge Corporation tallied the latest figures on construction contracts awarded in the 37 states east of the Rockies, a record August total of $1.8 billion, 20 per cent over the 1954 month, had brought the total for the first eight months of 1955 to $16.1 billion, a new high for the eight months of any year and 27 per cent over the previous high in 1954; and all but one of the 15 building types on the Dodge classification list shared the gain. Details on page 414.

Not-So-Public Relations

How have architects participated in this year's nationwide public activity in preparation for the White House Conference on Education November 28–December 1? Mostly by staying out of it, would be the net impression gained from a RECORD survey of chairmen in the 48 states and five territories. Each chairman was asked for the name and occupation of his subcommittee chairman on the topic (the key one for architecture) "What Are Our School Building Needs?"; for the names of any architects on any of his committees for the conference; and for a statement as to whether the American Institute of Architects or any of its local chapters had offered their services to his committee or were in any way participating in conference activities. Of 26 chairmen responding, only seven could report any architects on any of the conference committees; only four could report any A.I.A. participation; and not one had an architect as chairman of his building subcommittee (main occupations represented in this post being education and business). There were among the responses such bright spots as these: (from the Arizona chairman) "The American Institute of Architects is having a meeting . . . [to which] representatives of the following groups have been invited — school administrators, legislators, architects, taxpayers' associations, school board associations, school supply houses and building contractors." . . . (from the New Hampshire chairman) "Let me assure you that the New Hampshire Association of Architects played an important part in the field of 'What Are Our School Building Needs?' . . . We . . . contacted the architects' group asking that one of their members be assigned to our panel on building needs. Norman P. Randlett of Laconia, N. H., president of the New Hampshire chapter of the A.I.A., did a splendid job in this capacity and we were very grateful for his participation." . . . "The Tennessee Society of Architects is one of the state organizations which is sponsoring our Tennessee White House Conference on Education." . . . Among the darkest of the dark spots (from states which shall be nameless): "In response to an invitation to nominate delegates to the [state] Conference on Education, the [state] Society of Professional Engineers nominated six men, . . . four of whom actually attended the conference. . . . To a similar invitation to the [state] Society of Architects of A.I.A., seven names were submitted, but none of these men attended the conference." And even more pointedly: "We will say frankly that none of [the state's] architects have offered their services to our committee and to my knowledge have not participated in any of its activities including the two area meetings as well as the State Conference. In the past while the writer was an officer in the Associated School Boards of [state], we tried numerous times to secure one or more architects to serve on various building panels but due to the press of time they declined participation. I am sorry that I am not able to report that we have had their active participation. We appreciate their valuable wealth of knowledge which would be of great help to school boards and conferences on education and we would have liked to have their representation but we have not been able to accomplish it." . . . Maybe the survey results show a distorted picture of the extent of architect participation in this public endeavor; maybe architects and A.I.A. chapters across the country have made the great contributions to it of which they are capable; but if they have, *who knows?*



— Drawn for the RECORD *by Alan Dunn*

"Too bad Vespasian couldn't have lived to see the one we're building back home on Columbus Circle —"

Engineer Salaries Up

A continuing increase in salaries, averaging in the past two years 8.2 per cent for medians in all professional grades in civil engineering, with a high of 11.1 per cent for one grade, is reported by the Committee on Salaries of the American Society of Civil Engineers. The survey on which this most recent report in the Committee's continuing study was based covered 57,186 employes in 401 organizations, including 103 consulting firms with 7070 engineering employes; 34 construction firms with 1576; 29 railroads, utilities and industries with 4184; 38 state highway departments with 35,785; 84 other governmental agencies with 4045; 113 educational institutions with 4526. The committee feels the latest results are "gratifying evidence that men with long experience are receiving better recognition than was the case in previous years."

(Continued on page 16)

MEETINGS AND MISCELLANY

(Continued from page 15)

Russian Visitors

At the invitation of the National Association of Home Builders, a group of ten Russian architects, city planners and builders will make a four-week tour of the U. S. this month. They will arrive in time to be guests at ceremonies of the grand opening of N.A.H.B.'s new headquarters in Washington October 3. The itinerary announced last month included New York, Oct. 5–6; Boston and Cambridge, Oct. 7–8; Fort Wayne, Ind., Oct. 9–10; Chicago, Oct. 10–11; Seattle, Oct. 14; San Francisco, Oct. 15–17; Los Angeles, Oct. 18–19; Tucson, Ariz., Oct. 20; Tyler, Tex., Oct. 21; Austin, Tex., Oct. 22; New Orleans, Oct. 25–26; Cleveland, Oct. 27; Washington, D. C., Oct. 28–29.

Worth the Winning

Rome Prize Fellowships for 1956–57 are offered by the American Academy in Rome to "mature students and artists capable of doing independent work" in architecture among other disciplines. Candidates must be U. S. citizens; though there is no age limit "the Academy aims to give the awards to young persons of outstanding promise, when such candidates apply." The Fellowships carry a stipend of $1250 a year, round-trip transportation between New York and Rome, studio space, residence at the Academy and an additional travel allowance. Applications and submissions of work in prescribed form must be at the Academy's New York office by December 30. Details from: Executive Secretary, American Academy in Rome, 101 Park Avenue, New York 17, New York. . . . **The Lloyd Warren Scholarship for 1956, 43rd Paris Prize in Architecture,** carrying a stipend of $5000 for a minimum of 18 months' travel and study in the U. S. and abroad, may be won by "any citizen of the United States of America who will be under 30 years of age as of July 1, 1956, provided he has a degree in architecture or is scheduled to obtain such a degree by June 1956, or who has the equivalent in education and practical experience combined, and can submit evidence to this effect acceptable to the Committee." The competition will consist of one problem to be executed between February 13 and March 19, 1956. Letters of application, in prescribed form, must be postmarked not later than Jan. 2, 1956. For details: Lloyd Warren Scholarship, Beaux-Arts Institute of Design, 115 East 40th Street, New York 16, New York. . . . Entries are due December 1 in the **Second Annual Professional Competition for Better Catholic Institutional Design** sponsored by the magazine *Church Properly Administration*. Invited to compete are all architectural firms in the United States and Canada which have completed since Jan. 1, 1950, buildings in any of the following categories: a church seating less than 400; a grade school accommodating 350 or more; a high school accommodating no more than 1000; a parish rectory for no more than eight priests; a parish convent. Plaques will be awarded to the winning firms; there will be "citation scrolls" for firms receiving honorable mention. For entry blanks: *Church Properly Administration*, 20 West Putnam Avenue, Greenwich, Conn. . . . *The School Executive* has announced its fifth annual competition **For Better School Design,** which has the approval of the A.I.A. Committee on Competitions. Entry blanks will be due March 1, 1956; entries March 15. Details from: *The School Executive*, 470 Fourth Avenue, New York 16, New York. . . . An **international competition** "for the planning of the Sanctuary of the Madonna delle Lacrime, and of the adjoining premises, in Siracusa, Sicily," has been announced by a committee specially constituted to conduct the competition. It is open to "all architects registered professionally in their own countries" and offers three prizes, of eight million, four million and two million lire (approximately $12,800, $6400 and $3200). Program and application forms from: Comitato Cittadino pro Santuario della Madonna delle Lacrime, Viale Cadorna, 1, Siracusa, Sicily, Italy.

VIPs at Michigan Society of Architects' renowned annual midsummer meeting at Mackinac. Above: Michigan past President Linn Smith; Mrs. Smith; A.I.A. just-past president Clair Ditchy; Mrs. Ditchy; A.I.A. president George Bain Cummings; Mrs. Cummings; Michigan president Elmer J. Manson; Mrs. Manson. At left (top) Mr. Manson receives "Man of the Year" award from Portland Cement Association's Gardner Martin and (below) Marvin J. Brokaw of F. W. Dodge chats with architects Adrian N. Langius and Roger Allen

News from Mackinac

The Michigan Society of Architects reports the best attendance ever at its 12th annual midsummer conference at the Grand Hotel on Mackinac Island this summer. More than 300 were registered for a program that included addresses by Harvey Campbell, executive vice president of the Detroit Board of Commerce, on St. Lawrence Seaway progress, and Prof. Ralph W. Hammett, A.I.A., of the University of Michigan, on postwar European architecture, as well as greetings from the national A.I.A. presented by President George Bain Cummings and his immediate predecessor, Clair W. Ditchy, Second Vice President John N. Richards and Great Lakes Regional Director Raymond S. Kastendieck. According to its custom of recent years, the Portland Cement Association had its "Architect of the Year" trophy to present, and the Michigan society president, Elmer J. Manson, was the recipient. The society was told that architects have subscribed 72 per cent of their quota for Michigan's Biddle House Restoration Project; and the score was improved in the course of the conference.

(More news on page 20)

MATICO Confetti

PAT. PEND.

meets every hospital flooring need — with the rare "plus" of cheerful styling

Upper Manhattan Medical Group, Health Insurance Plan Clinic New York, N. Y.

Associated Architects: George Nemeny, Abraham W. Geller, Basil Yurchenco

General Contractor: Adson Builders, Inc.

Flooring Contractor: Sidney Fenster, Inc.

Widely acclaimed, New York's Upper Manhattan Medical Group Clinic integrates the highest standards of architecture, function and decor in an ideal union . . . in which MATICO Confetti tile is an essential specified element.

It's easy to see why more and more architects are specifying MATICO Confetti Tile Flooring for hospital projects.

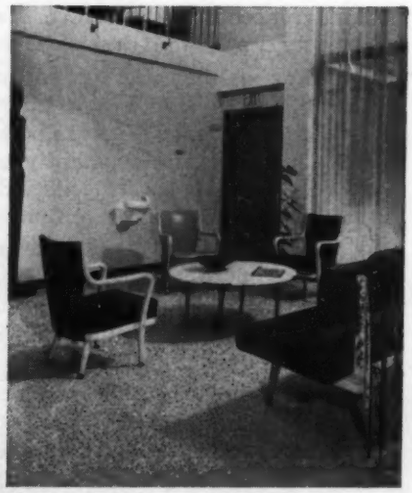
Basically, it's because Confetti satisfies every need, every rigid requirement of the modern hospital. First, it is sanitary, durable and quietly resilient. But more than that, it is also fire-resistant and low in cost for both installation and maintenance. And, in addition to all these utility values, Confetti's gay dots-of-color styling lends new charm and cheer where past custom dictated hygienic coldness.

– Good reasons, all, why you can specify Confetti tile flooring not only with confidence, but with justifiable enthusiasm, in your next hospital project as well as other types of projects.

In these light and lifting circulation areas the Confetti floor of white with black mottle contributes to the air of buoyancy and lightness. Even under heavy traffic conditions Confetti's bright colors last and last.

In consultation rooms for doctors and patients Confetti was specified also – this time in black with white mottle. (In addition, Confetti is also available in nine other color combinations).

Architects planned the pharmacy as a "display piece" near the Clinic's entrance, where it can be seen through a wall of glass. Here, too, Confetti in white with black mottle was specified.



In this intimate waiting room, the decor is one of colorful furnishings, restful lighting and more of MATICO'S airy, bright Confetti flooring.

MASTIC TILE CORPORATION OF AMERICA

Houston, Tex. • Long Beach, Calif. • Joliet, Ill. • Newburgh, N. Y.

Confetti • Aristoflex • Parquetry • Maticork • Asphalt Tile • Rubber Tile • Vinyl Tile • Cork Tile • Plastic Wall Tile

QUALITY CONTROLLED MATICO PRODUCTS

Guaranteed by Good Housekeeping

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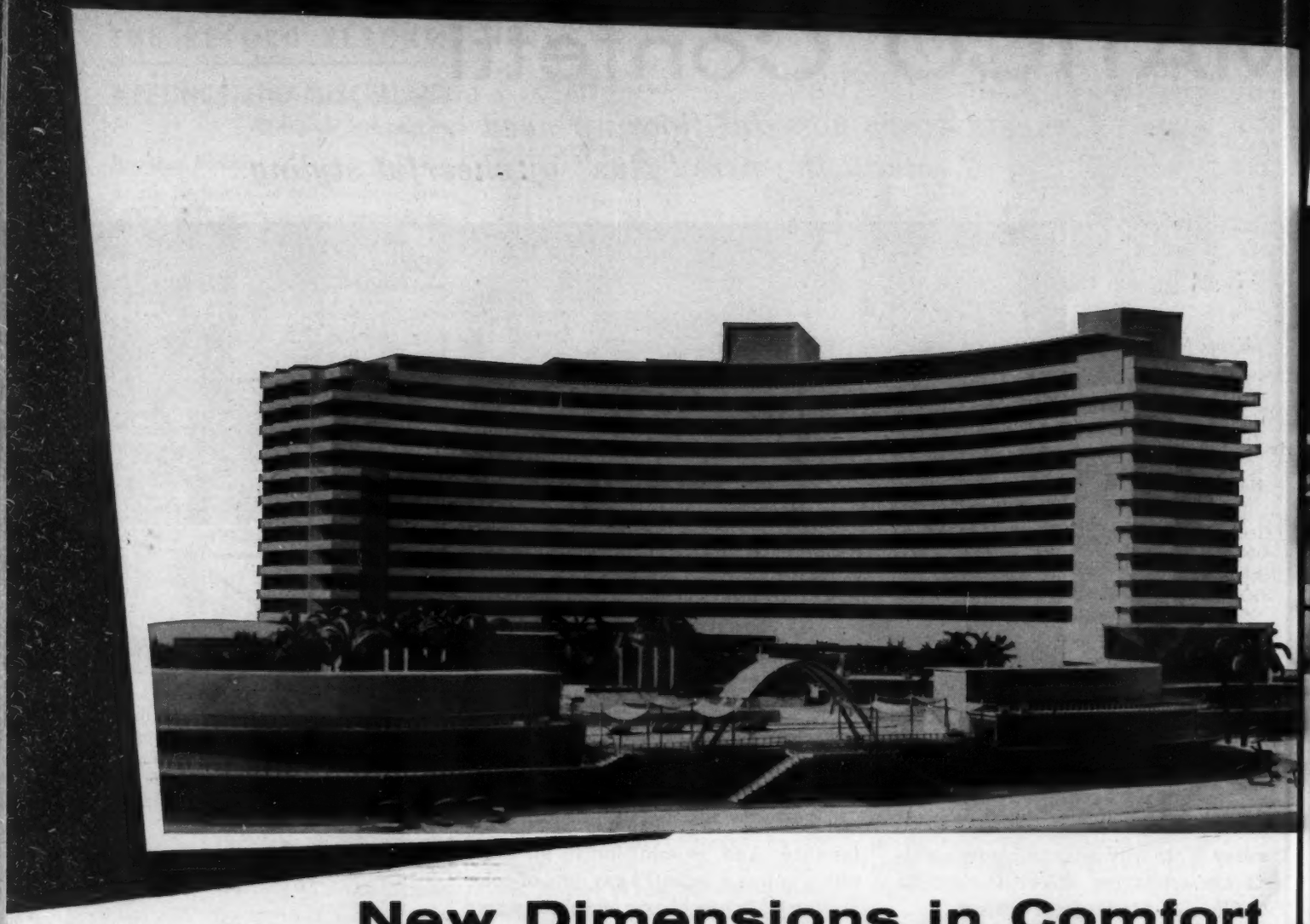


New Dimensions in Comfort

Only one standard—*perfection*—guided the creators of this magnificent luxury resort. Here is comfort on a scale rarely experienced and never to be forgotten.

Emphasizing the enjoyment of The Fontainebleau's matchless splendor is a made-to-order indoor climate that's better than Nature's best! Ideal, perfectly regulated temperatures are constantly maintained throughout the entire building by a specially designed system of Johnson Automatic Temperature Control.

Highlights of this pace-setting control system include finger-tip selection of temperatures through Johnson Thermostats in each of The Fontainebleau's 565 guest rooms, all of which are equipped with Johnson-controlled air conditioning units.

The comfort requirements of the public areas are met with equal satisfaction by other Johnson thermostats, valves and related apparatus controlling 22 York "Recold" air conditioning units, ranging from 4.86 to 118.4 tons. These spaces vary in size from small shops to large dining rooms, cocktail lounges, the 17,000 sq. ft. Main Lobby and a Grand Ballroom accommodating 1,800 people.

With this Johnson-engineered Control System, The Fontainebleau enjoys not only the benefits of the finest in modern comfort control, but also is assured of the maximum return on every heating and cooling dollar spent.

The fact that The Fontainebleau—and the great majority of the nation's other better buildings—depend on Johnson Control is your assurance of its unmatched superiority. Johnson can provide the same high standards of comfort and economy for *any* building, small or large. An engineer from a nearby Johnson branch will gladly discuss your temperature control problems and give you his recommendations without obligation.

Johnson Service Company, 507-F East Michigan Street, Milwaukee 1, Wisconsin. Direct Branch Offices in Principal Cities.

Hotel Fontainebleau, Miami Beach. Morris Lapidus, architect, New York and Miami Beach; Sasnett & Bennett, mechanical engineers, Miami; B. A. Jacobi, air conditioning engineering advisor, New York; Taylor Construction Co., general contractor, Miami; Hill York Corp., air conditioning contractor, Miami.

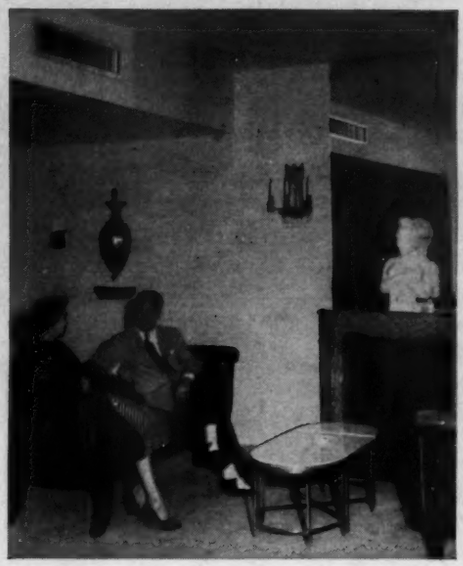
JOHNSON CONTROL

TEMPERATURE AIR CONDITIONING

PLANNING • MANUFACTURING • INSTALLING • SINCE 1885

For America's Finest Luxury Hotel . . .
Indoor Climate that's Better than Nature's Best!

Spacious size presents no comfort problem in The Fontainebleau's impressive lobby or other public areas. Strategically located Johnson Thermostats insure refreshing, even temperatures regardless of the outdoor weather.

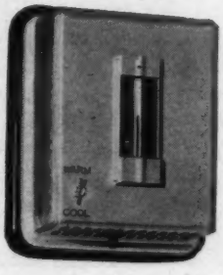


Johnson *Individual Room* Control allows the occupants of each room to select their own personal weather. Thermostats regulate the supply of conditioned air furnished by units mounted above the entrances.

In La Ronde, the hotel's smart supper club, as many as 500 guests are entertained in perfect comfort. Johnson Thermostats easily compensate for changing occupancy levels to maintain an ideal temperature.

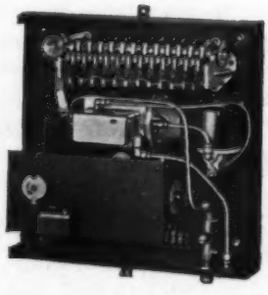
. . . the Fabulous Fontainebleau

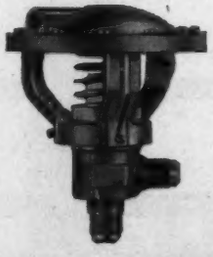
Interesting Applications of JOHNSON CONTROL . . .



Room temperatures to suit the individual preference of guests are provided through Johnson T-432 Heating-Cooling Thermostats controlling Johnson Water Valves on room units. This sensitive, fast-acting thermostat permits occupants to enjoy ideal temperatures at all times—never feel a need for more or less heating and cooling. For complete description of operating features, write for Bulletin T-432.

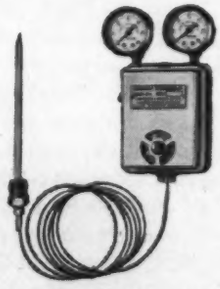
Capacity control of the Fontainebleau's seven refrigeration compressors is accomplished automatically by a Johnson Pneumatic Step Controller. The unit starts compressors in proper sequence to maintain the set chilled water temperature. A time delay assures the proper interval between successive switch operations on start-up or after current failure. Send for Bulletin G-180.





Air conditioning units in guest rooms are equipped with Johnson V-152 Water Valves to regulate the hot and chilled water supply. Designed especially for this type of application, this compact valve provides smooth, accurate response to the demands of the Room Thermostat. Features include V-ring self-sealing packing and molded rubber diaphragm. Write for Bulletin V-152.

Comfort control in some of the public areas is provided by the highly accurate Series T-800 Johnson Thermostats which sense the temperatures of the return air and maintain the temperature of the conditioned air at the proper level. Series T-800 Thermostats are available in a variety of models and are adaptable to many applications. Send for Bulletin T-800.



NEW ERA FOR WRIGHT AT 86: THE MARKETPLACE REDEEMED?

There's big news in the home furnishings world this fall — the arch enemy of the mass produced, the merely marketable, is the designer of three important new fall lines — a fabric and wallpaper collection for F. Schumacher and Company, furniture for Heritage-Henredon, and rugs for Karastan. For a first look at Frank Lloyd Wright the industrial designer, this page presents some of the designs from the Schumacher collection; information on the other lines has not yet been released.

Schumacher's "Taliesin Line" comprises altogether 13 fabrics and four wallpapers ranging in (retail) price from $3.40 to $13.50 a yard for the fabrics and $5.95 to $7.45 a roll for the wallpapers. Of the eight patterned numbers in the collection, seven are shown here.

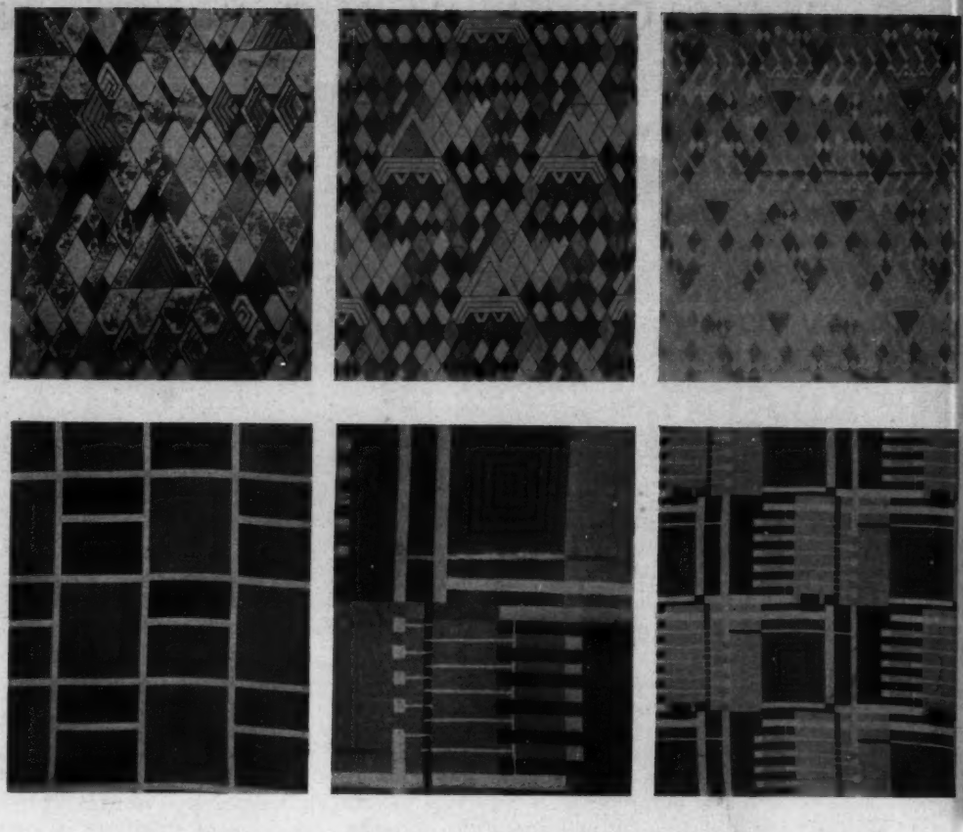
Mr. Wright's new career started nearly two years ago, when Schumacher's director of design, René Carrillo, made a pilgrimage to Taliesin West. Mr. Carrillo, long an admirer and something of a student of Wright, hoped the master might be persuaded to apply his design philosophy to a field in which a much wider appreciation of his work would be possible than in architecture. This idea appealed, and the project was on.

It began with a great portfolio of preliminary designs produced at Taliesin — designs wonderful to look at, but not adaptable to mass production and sale.

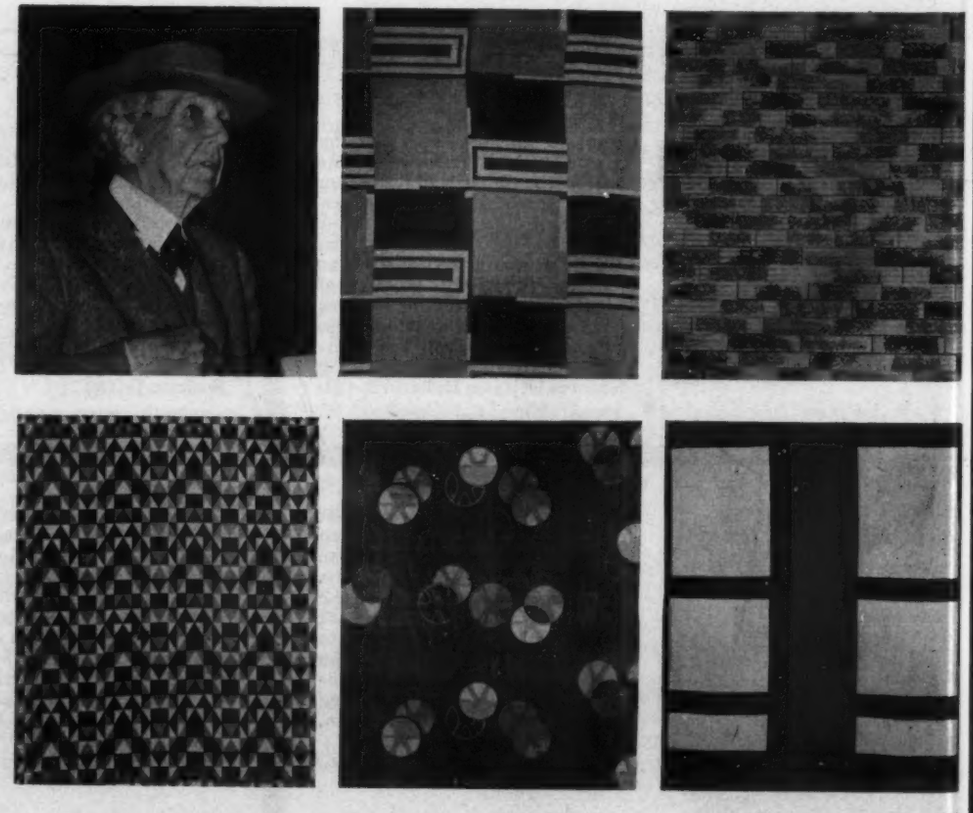
So Mr. Carrillo evolved a second set of patterns which had their basis in the Wright designs and in some cases from patterns pulled from architectural drawings of Wright's — and then there were more visits to Taliesin, and long conferences with Mr. Wright; and there were more patterns developed by Mr. Wright from Mr. Carrillo's adaptations of his original designs; and finally, a "Taliesin Line."

Mr. Carrillo, who found the process a wonderful if exhausting experience, was intrigued to note that while Mr. Wright's designs were comprised of basic elements as geometric as a façade by Mies van der Rohe, they achieved a richness and a subtlety that far transcended their mathematics — and that any changes Mr. Wright made in a design were always in the direction of greater complexity, added ornament.

The line is being sold through "dealerships" available for $35 to architects as well as decorators and department stores, and, of course, at Schumacher's, 60 West 40th St., New York 18, N. Y.



Seven of the 13 fabric designs in the "Taliesin" line are shown here. Above: evolution of two of them, from the proposals submitted by Schumacher's director of design to Mr. Wright (photos at left), through the drawings as developed by Mr. Wright (center photos) to the final patterns as they were completed and approved by Mr. Wright. Below: the designer and five more of the final designs. All are available in several color combinations; these were selected by Schumacher but, again, approved by Mr. Wright



(More news on page 24)

NEW JERSEY STATE TEACHERS' COLLEGE, MONTCLAIR, N. J. (2 bldgs.) Architect: Emil Schmidlin. Contractor: Martin Infante Co., Inc., Lodi, N. J. Lupton Curtain-Wall System, Type H. Width modules 3'9" & 4'1". Fixed glass and projected-in ventilators. Opaque areas are ⅛" thick embossed, fluted aluminum, Alumilited. Special features: Heavy aluminum sub-frames and door frames.

FIFTH AVENUE DIAMOND CLUB, NEW YORK CITY. Architects: Sylvan Bien & Robert L. Bien. Contractors: Kayfield Construction Corp. Lupton Curtain-Wall System Type H. Width Modules: 3'7" and 3'4". Ventilators: Project out for window cleaning only. ¼ Plate Glass. Facing Material: ⅛" aluminum plate, Alumilited. 6" back up wall with air conditioning unit.

Build it Faster with a Lupton Curtain-Wall

With the new Lupton Simplified Curtain-Wall Systems, buildings can be completed much sooner than with conventional construction. The Lupton Curtain-Walls can be ready for installation even before the building framework is finished, and installed in days. There's no delay because of weather, either . . . installation is done from within the building.

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unusual freedom in design . . . variations in panel sizes, material, texture and color —

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developed in collaboration with leading architects, backed by Lupton's fifty years' experience in manufacturing Lupton Metal Windows —

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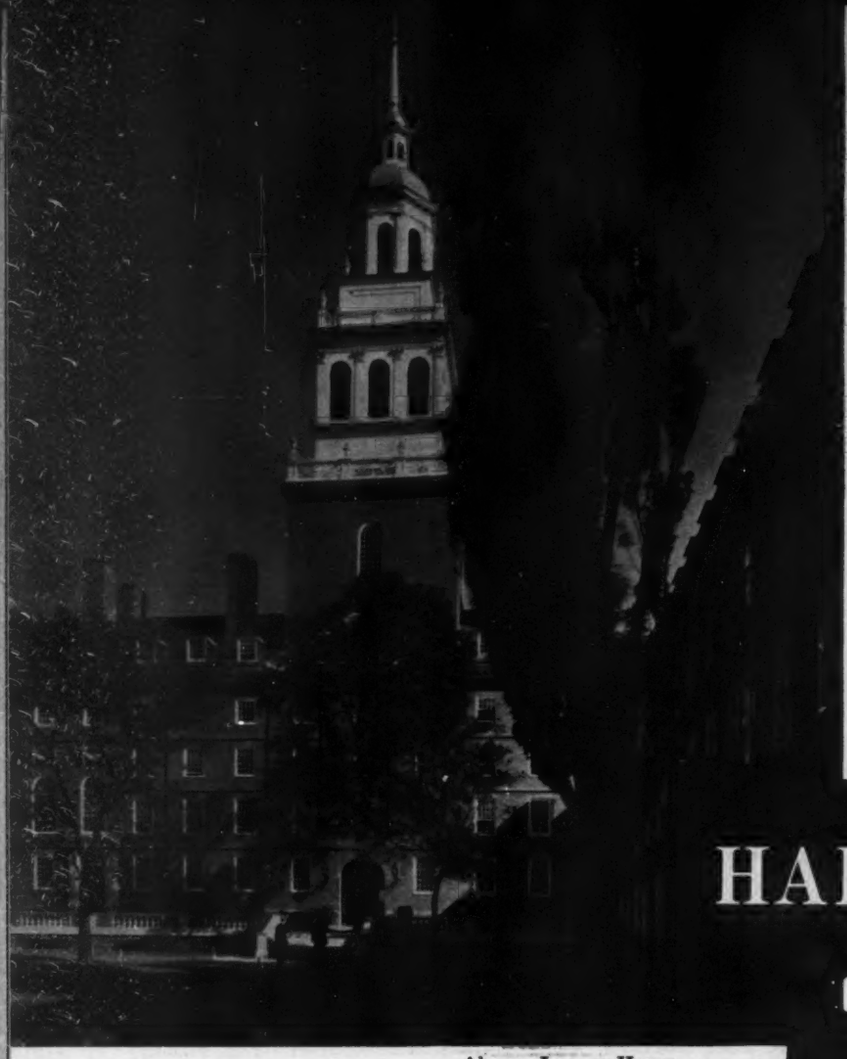
LUPTON

Metal Windows and Curtain-Walls

page 24)



Architects: for Lowell House, Dunster House, McKinlock Hall, Vanderbilt Hall, Littauer Building, Gordon McKay Laboratory–SHEPLEY, BULFINCH, RICHARDSON & ABBOTT • for Aldrich Hall–PERRY, SHAW, HEPBURN, KEHOE & DEAN and McKIM, MEAD & WHITE, Associate Architects.

Mechanical Engineers: for Lowell House, McKinlock Hall, Vanderbilt Hall–FRENCH & HUBBARD • for Dunster House, Littauer Building–RICHARDSON & GAY • for Aldrich Hall–HAYDEN, HARDING & BUCHANAN • for Gordon McKay Laboratory–R. G. VANDERWEIL.

Heating Contractors: for Lowell House, McKinlock Hall–CLEGHORN CO. • for Dunster House–T. J. MURPHY & CO. • for Vanderbilt Hall–JAS. S. CASSEDY, INC. • for Littauer Building–V. J. KENNEALLY CO. • for Aldrich Hall–THE MERRILL CO., INC. • for Gordon McKay Laboratory–McLEAN-COUSENS & BARTON, INC.

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HARVARD

Above: LOWELL HOUSE

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1

2

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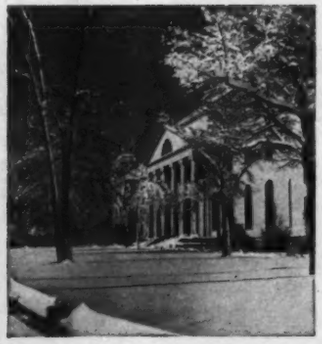

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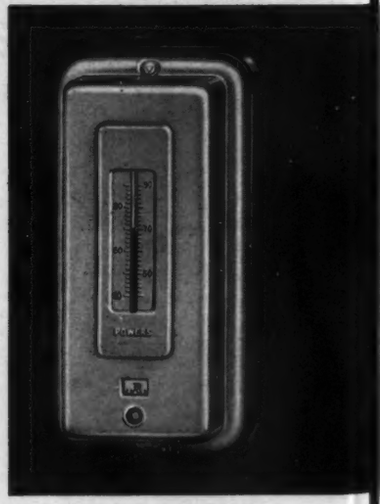

1 DUNSTER HOUSE, on the Charles River
2 MCKINLOCK HALL
3 VANDERBILT HALL
4 LITTAUER BUILDING

ALDRICH HALL, Harvard Graduate School of Business Administration

One of the 17 unique classrooms shown at left seats 158 students; three others seat 80; and 13 accommodate 102 each. The rooms have been arranged to provide an intimate relationship between instructor and student in the give-and-take discussions by the case method generally used throughout the Harvard School of Business Administration.

Below: GORDON McKAY LABORATORY

Interior photo shows two-story room with important features, a high door and removable intermediate floor to permit varying uses. Research in this laboratory is conducted in mechanical engineering, electronics, electrical engineering and the properties of matter.

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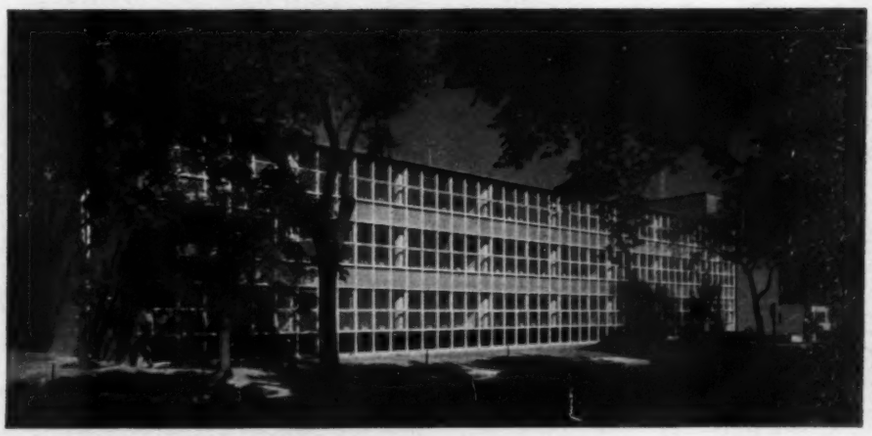
For more than half a century POWERS control has been renowned for its matchless ability to give many years of efficient economical service. Users often report 25 to 50 years of reliable control with a minimum of repairs.

Experience gained here and in thousands of other famous buildings qualifies POWERS to help you select the most economical and efficient temperature control for your buildings. When problems of temperature control arise, call our nearest office or write us direct.



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THE GOVERNMENT AS PUBLISHER: A LOOK AT SOME OF ITS PERIODICALS

The nation's biggest publisher, the Federal government, issues, in addition to a vast number of pamphlets, a great many regular periodicals. The RECORD has sampled some of these which might prove of interest to the architect, either because of their immediate relationship to the construction industry or because they reflect both government and professional trends of opinion.

In the latter case, the Department of Health, Education and Welfare, where the Office of Education is particularly active as a publisher, stands out especially, with several publications reporting developments in the fields of, naturally, health, education and welfare. *Federal Probation*, which is published by the Administrative Office of the United States Courts, is likewise an impressive, rather scholarly periodical subtitled "A Journal of Correctional Philosophy and Practice."

More directly related to the industry, *Construction Review* publishes month-to-month information and special reports prepared jointly by the statistical sections of the Departments of Labor and Commerce; the *Review* was initiated at the beginning of this year to consolidate several independent efforts of the two departments. Reports of government research into building materials and structural problems, as well as other technical fields, are published in the National Bureau of Standards *Technical News Bulletin*.

All of the periodicals are available from the departments issuing them, unless another source has been indicated. In addition, the Government Printing Office publishes a semiannual listing of all its periodicals.

FEDERAL PROBATION. Published quarterly by the Administrative Office of the United States Courts, in cooperation with the Bureau of Prisons, Department of Justice; no subscription charge. The most recent issue, that of June 1955, contains several articles, written by sociologists, psychologists and professional court and probation officers, ranging from studies of particular types of offenders to their treatment, and includes a number of pieces focusing on the problems of juvenile delinquency.

THE SPOTLIGHT on Organization and Supervision in Large High Schools. Published bimonthly from September through May by the Office of Education, U. S. Department of Health, Education and Welfare; no subscription charge. As its name indicates, *The Spotlight* serves in part as an exchange of views and practices among large high schools, in part as a place for the publication of research results. A guest columnist each month provides an editorial note.

HIGHER EDUCATION. Published monthly from September through May by the Office of Education, Department of Health, Education and Welfare, and available through the Superintendent of Documents, U. S. Government Printing Office at the rate of $.10 per issue or $.75 annually. Directed chiefly toward college administrators, the magazine includes articles on fiscal and administrative problems, as well as news of curricular and other matters in American universities.

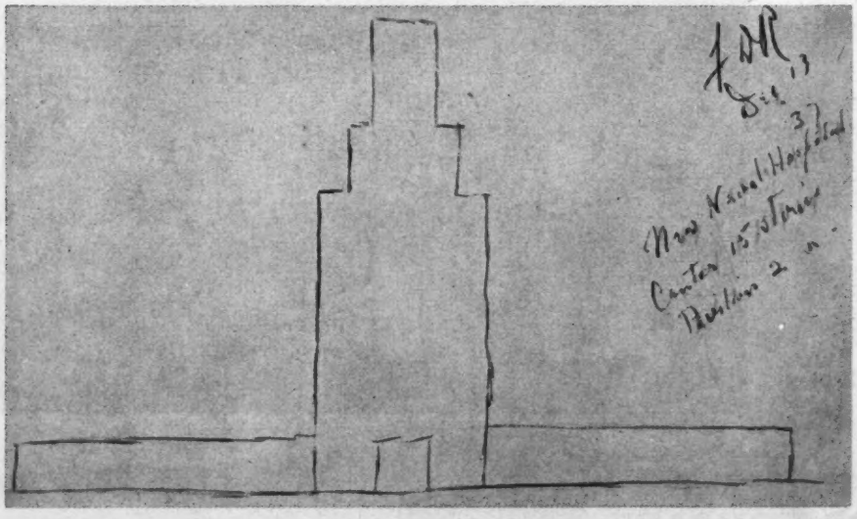
SCHOOL LIFE. Published monthly from October through June by the Office of Education, Department of Health, Education and Welfare; available from the Superintendent of Documents, U. S. Government Printing Office at the rate of $.15 per issue or $1.25 yearly. Since this is the "Official Journal of the Office of Education," the contents cover a fairly broad range of subjects within the fields of public primary and secondary education. In its June 1955 issue, articles discussed teaching and exchange teacher programs, took statistical looks at public school personnel and facilities, reviewed Office of Education activities and reviewed the building program in a Midwestern town.

NEWS NOTES ON JUVENILE DELINQUENCY. Published irregularly by the Children's Bureau of the Social Security Administration, Department of Health, Education and Welfare; no subscription charge. The mimeographed "newsletter" reports on activities in the Children's Bureau and by state and local governments, on new directions and new facilities for the handling of juvenile delinquents.

CHILDREN. Published bimonthly by the Children's Bureau of the Social Security Administration, Department of Health, Education and Welfare; available from the Superintendent of Documents, U. S. Government Printing Office at the rate of $.25 per issue or $1.25 per year. Subtitled "A Professional Journal on Services for Children and on Child Life," the magazine devoted its most recent issue (July–August 1955) to a special study, "A Twenty Year Perspective on Services to Children," which was a review of "developments in child health and welfare since the passage of the Social Security Act," and concentrated, therefore, on the relationship of government to welfare.

AGING. Published bimonthly by the Department of Health Education and Welfare; available from the Superintendent of Documents, U. S. Government Printing Office at the rate of $.10 per issue or $.50 per year. A "newsletter" type of publication, *Aging* reports local, state and Federal programs in the field, as well as industrial and

(Continued on page 332)



FDR, Architect: the U. S. Navy Civil Engineer Corps Bulletin *published this sketch done by President Roosevelt during an early discussion about the Naval Hospital at Bethesda. The President's program called for a 15-story tower and two-story pavilion*

(More news on page 26)

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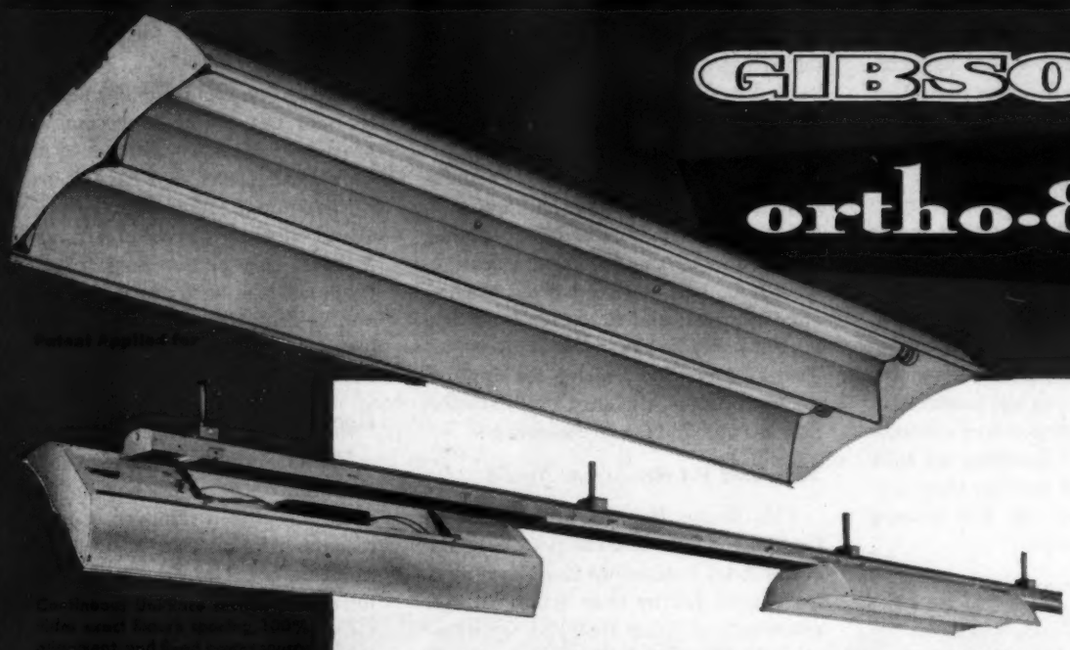

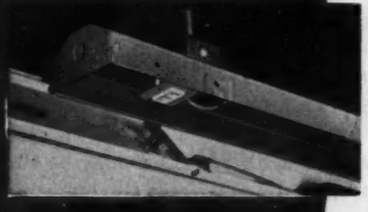

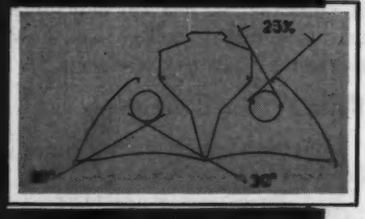

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The Uni-Race provides power for temporary lighting and tools. When the building is ready for occupancy, spotless fixtures can be snapped into place by two men, without tools, at the rate of 45 to 55 units per hour—in continuous rows or at intervals of 4, 8, 12 or more feet. Spacing can be changed, more units added, repairs made—all without interrupting service to other fixtures on the circuit, or additional electrical work.

The result is a top-quality installation with savings on materials and labor up to 50%.

Get all the facts in our Ortho-88 bulletin, which we'll gladly send on request, and you'll see why it pays to use the Ortho-88.

Gibson LIGHTING

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MORE FACILITIES COVERED IN NEW COLLEGE HOUSING LAW

The primary emphasis in the college housing program of the Housing and Home Finance Agency will continue to be on residence halls, but action at the first session of the 84th Congress extensively liberalized the HHFA college assistance program. The agency moved during the summer to apply the new benefits, making loans available to colleges and universities for dining halls and cafeterias, student unions and centers, student health facilities and other services essential to college housing. These categories are in addition to the student and faculty housing that has been covered during the four years in which the program has been operative (see AR, Jan. 1955, pages 151–154).

John C. Hazeltine, Commissioner of Community Facilities, the HHFA division administering the college housing loans, said that the primary emphasis would continue to be on the financing of residences at the colleges and universities. Supplementary facilities, he said, would be considered only as they contribute to rounding out the housing facilities on each campus.

Longer to Pay, Less Interest

Congress, in its liberalizing mood, extended the maximum period of amortization for these loans from 40 to 50 years. But again, Mr. Hazeltine warned that the conservative approach would prevail as far as his agency was concerned. The policy will be to encourage amortization in 40 years in instances where sound loans can be worked for the shorter period.

Congress also lowered the interest rate on these loans from 3¼ per cent to 2¾ per cent, a move opposed by the Administration, and boosted total program authorization from $300 million to $500 million. The program, however, operates on the release of borrowing authority from the Bureau of the Budget, and Commissioner Hazeltine said only $65 million would be available for loans during fiscal 1956, ending next July 1. (No direct Federal appropriations are required.)

Expansion Seems Certain

Architects can expect the program both to expand and to encourage the private lenders to become more active in this field. The Commissioner explained that with present costs of construction it has been extremely difficult to provide student housing without charging rentals and fees beyond the reach of the average college student. The availability of funds at lower rates and to be amortized over a longer period of years can do a great deal toward solving that problem, he added.

Forms and procedures have been made available through the six regional administrators of the HHFA. These are located in New York, Philadelphia, Atlanta, Fort Worth, Chicago, and San Francisco.

At midyear, the Community Facilities Administration of HHFA had approved 178 loans in the entire program totaling $135 million. Another 60 applications for $34 million had been given preliminary approval and funds for them had been reserved. These loans were expected to provide housing for approximately 51,000 students, 500 student families and 700 faculty members.

FHA and VA Resources Noted

The House Banking and Currency Committee feels that the private higher educational institutions have been missing a good bet by their failure to take advantage of other financial assistance available through existing Federal programs — the FHA-insured and VA-guaranteed loans. These benefits could be used to provide faculty housing with the institution's own money invested in the mortgages, it was suggested. Most such schools have funds for investment and do invest in mortgages as well as bonds and other securities. In many cases they will make home purchase mortgage loans to faculty members but only on restricted conventional terms, the committee pointed out, such as 4½ per cent interest but only on a 60 per cent of value basis and for a 15-year term. This runs down payments and monthly payments to almost prohibitive figures.

The House committee suggests: "However, if such an institution would become an approved lender under the FHA-insured or VA-guaranteed home loan programs for the purpose of making mortgage loans to faculty members, it could then make 25- to 30-year mortgage loans with very moderate cash down payment and monthly payment requirements and have a mortgage loan in its investment account that would be beyond any criticism. Certainly since Congress in its national banking laws permits national banks to invest in FHA and VA home mortgage loans without regard to the rigid restrictions otherwise applicable to real estate loans it could hardly be contended that FHA-insured and VA-guaranteed mortgage loans could be other than prime investments for any endowment fund of an educational institution."

The House group further pointed out that for the college to become an approved lender it would have to make a showing, in the case of FHA loans, that it was equipped to make and service real estate loans. In the case of VA, however, it would only be necessary to submit a proposed loan to a VA office for prior approval of the guaranty. Any of the regional offices of FHA or VA can advise the colleges of the steps to be taken.

Hoover Disapproval Ignored

The Congressional decision to extend the limits of the college housing program came despite a Hoover Commission recommendation that it be terminated immediately. The Hoover unit on lending agencies took the view that with any GI emergency now passed, this activity becomes one of general aid to colleges and universities. "The demonstrated ability of colleges to secure such loans elsewhere compels us to conclude that this program is no longer necessary," its report stated.

Sen. Harry F. Byrd (D-Va.), chairman of the Joint Committee on Reduction of Non-essential Government Expenditures, also opposed the college housing loans. Early this year he said: "The housing administration appears to be encouraging four-year debts for both private and state colleges and universities to the Federal government."

What's Newly Authorized

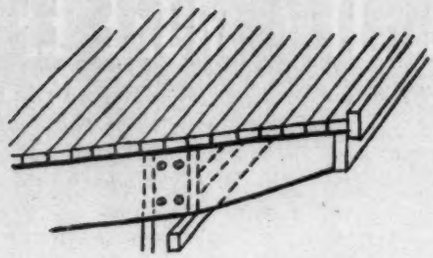
Congress defined "other educational facilities" as:

1. New structures suitable for use as cafeterias or dining halls, student centers or student unions, infirmaries, or other inpatient or outpatient health facilities, and for other essential service facilities.

2. Structures suitable for the above uses provided by rehabilitation, alteration, conversion, or improvement of existing structures which are otherwise inadequate for such uses.

(More news on page 30)

How would you insulate this grade school roof?

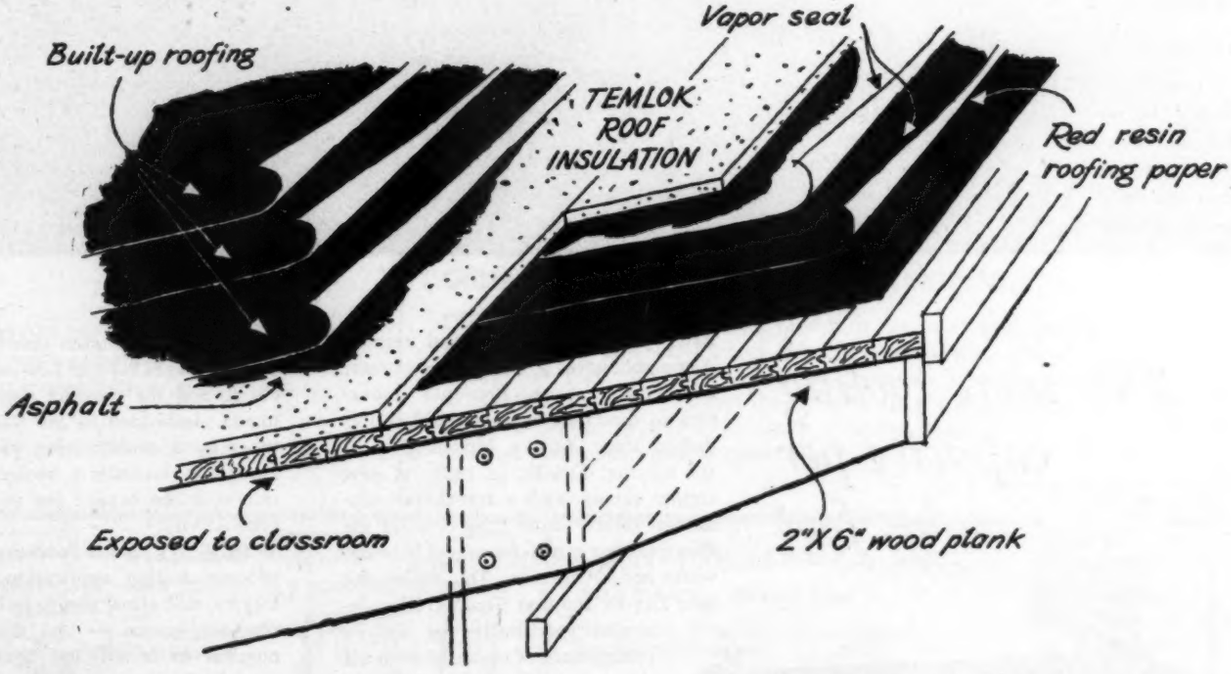


An elementary school is being built in one of the Middle Atlantic states. The roof deck will be formed of 2" x 6" planks, with the underside exposed to the classrooms. Insulation must provide adequate protection against both winter heat loss and summer heat penetration, yet must be economical to meet a tight building budget. What type, and how much roof insulation would you specify?

Since there is no need for a costlier, heavy-duty material, many architects would select a one-inch thickness of Armstrong Temlok Roof Insulation. This amount of Temlok, combined with the 2" wood plank deck, will give the entire structure a U-factor of 0.17. This is enough insulation to provide complete year-round comfort and heating plant economy.

Temlok is often the choice when both low cost and high efficiency are required in a roof insulation. It's lightweight and easy to handle, yet it can take plenty of on-the-job abuse. An exceptionally firm base for built-up roofing, Temlok absorbs little pitch or asphalt.

Of course, each roof insulation job has its own requirements. Where extra moisture resistance is needed, or service conditions are more severe, you may wish to specify Armstrong Corkboard or Asphalt-Impregnated Temlok. For full details on all three Armstrong roof insulation materials, call your Armstrong office. For the free booklet, "Armstrong Roof Insulations," write Armstrong Cork Company, 3810 Rock Street, Lancaster, Pa.



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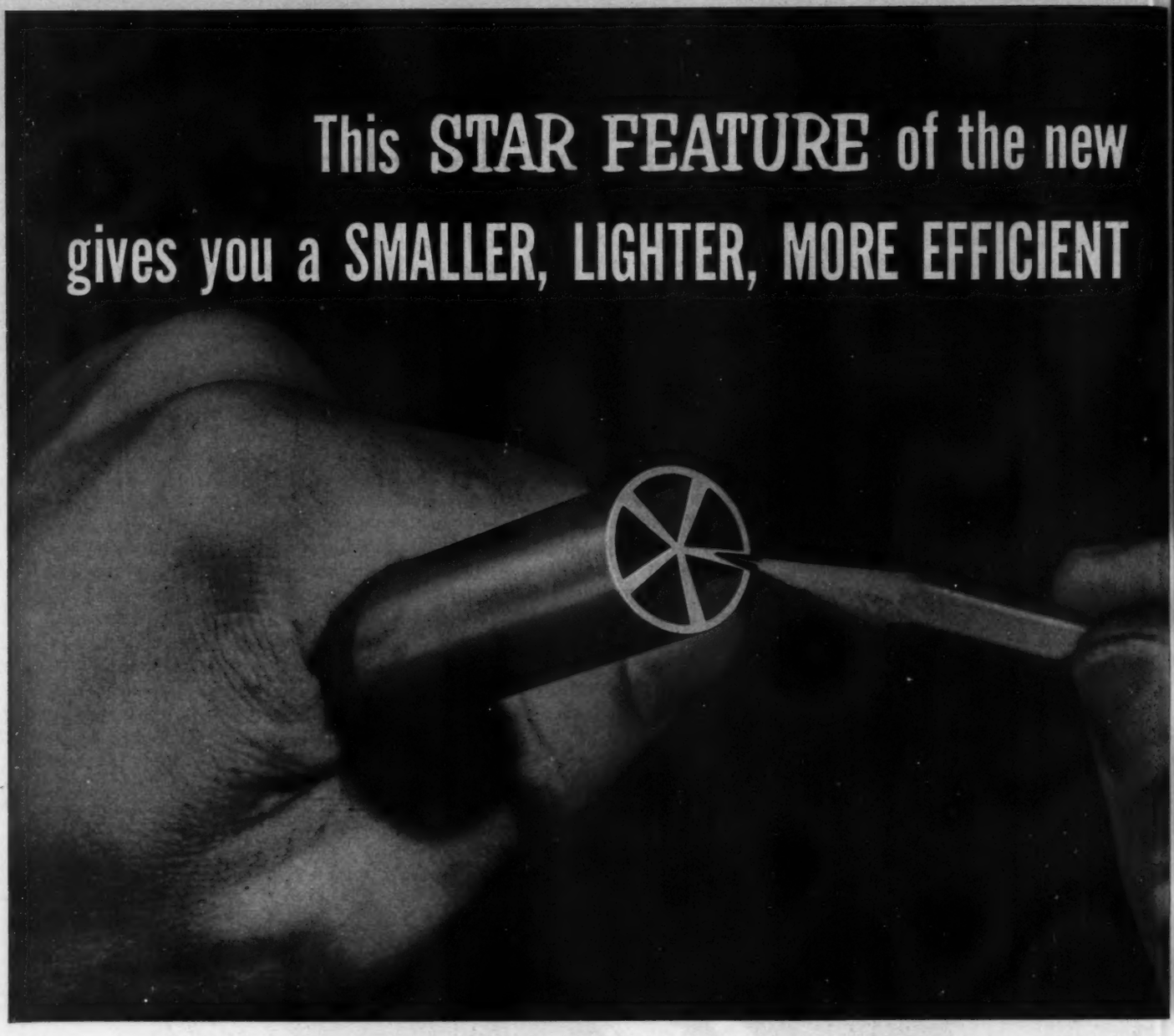
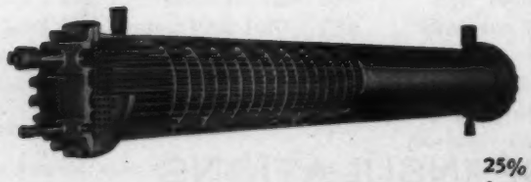
This STAR FEATURE of the new gives you a SMALLER, LIGHTER, MORE EFFICIENT



25% more cooling capacity per cubic foot



After years of research and testing, Acme announces a new and important advancement — the first real innovation in direct expansion liquid chiller design since Acme's introduction of the original Dry-Ex in 1937. A new copper tubing with a star-shaped aluminum insert* more than doubles the effective heat transfer surfaces between water and refrigerant. This makes the new Dry-Ex the first liquid chiller designed specifically for today's refrigerants. Combined with all the proved advantages of Acme's thru-tube construction, the star-insert tubing makes the new Dry-Ex smaller and lighter, with 25% more cooling capacity per cubic foot than ever before possible.

Acme's new aluminum insert provides clear passages for the flow of refrigerant so that the pressure drop is minimized. Imbedded in the walls of the tubes by a cold-drawing process, the aluminum establishes molecular contact with the copper for perfect heat conductivity.

Whether it's an air conditioning or a process chilling application, the new Dry-Ex will allow you to build a more compact system — one that is economical to install and operate. Dependability is assured. The new Dry-Ex incorporates all the proven construction features that have made the Dry-Ex the leading product in its field since originated by Acme in 1937.

* Patent applied for.

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CHILLER SIZE AND WEIGHT REDUCED SIGNIFICANTLY

Diagram shows typical reduction in chiller diameter made possible by the greater heat-transfer capacity of Acme's new Dry-Ex. Because of their smaller size, these chillers fit into closer spaces, are easier for the contractor to handle and install. Reduced weight saves freight costs and smaller cubic content of refrigerant and water means a smaller refrigerant charge, less load on floors and mounting structures.

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DISMISS ARCHITECTS' CASE AGAINST ENGINEERING FIRM

An appeal by the Ontario Association of Architects against the acquittal of a consulting engineering firm on the charge of offering architectural services to the public has been dismissed in magistrate's court.

In his decision, County Court Judge Ian M. Macdonell noted that the architects had claimed that the Architects Act gave them the sole right to practice architecture in Ontario, and further, that O.A.A. counsel A. L. Fleming, Q.C., had contended it was possible to decide whether a particular building job is essentially one for an architect or one for an engineer. "I can find nothing in the legislation," said Judge Macdonell, "which enables the court to draw such a line between the two professions, and I do not think that the court should endeavor to do so until the legislature passes appropriate provisions.

"I think it is significant that there is no definition of 'architecture' in the Act, whereas the definition of 'professional engineer' contained in the Professional Engineers Act is wide indeed and covers 'steel, concrete and reinforced concrete' structures."

Judge Macdonell found that the engineers held themselves able to perform architectural services in the course of work undertaken by them as an engineering firm, and that this is authorized by the Architects Act. He cited a subsection of this Act which states that nothing shall prevent any firm entitled to practice under the Professional Engineers Act from performing architectural services "in the course of any work undertaken or proposed to be undertaken by such partnership, association or corporation pursuant to such entitlement."

"It is up to a client," he said, "to weigh the qualifications of firms of architects and engineers and decide which he wishes to employ."

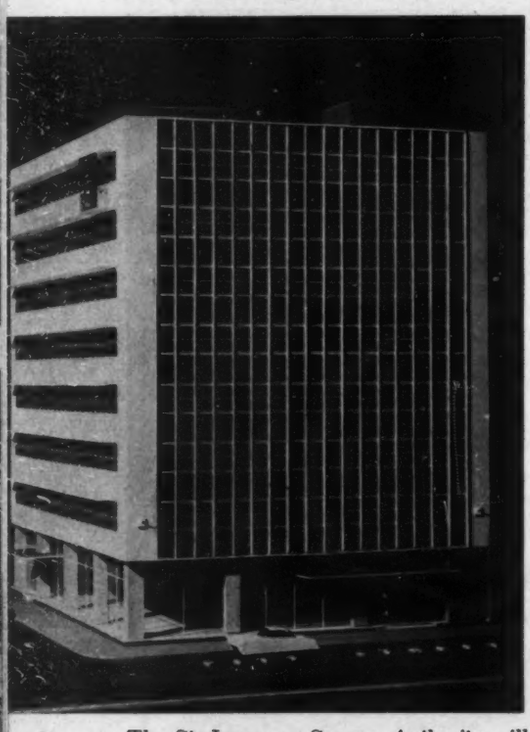
O.A.A. President Comments

George D. Gibson, O.A.A. president, in remarking on the decision, expressed the belief that the purpose of the respective professional Acts — to protect the public — has been thwarted by the court's suggestion that it is up to the client to decide whether he wants an architect or an engineer to design his project. "I believe that the case was conducted on both sides at the highest professional level, purely as a test case, and trust that no harm has been done to the high repute in which both professions are currently held.

"However," Mr. Gibson continued, "I need hardly say how disappointed I was in the example given by the learned judge of the difference between an engineer and an architect: the architect is trained to give buildings a pleasing appearance both inside and out. This attitude, unfortunately, is the popular conception; and the true function of the architect seems to be particularly difficult to get across.

"I believe that in Ontario there is considerable mutual respect for the functions of the two professions. Certainly, in 99 per cent of the cases there is a very clear understanding of the proper dividing line between their respective functions, and except for the difficult one per cent, there is no attempt or intention to encroach on the other's rightful field.

"As architects we, in our wisdom, must be very patient and forbearing with the ignorance (as related to our function) of our legislators. In spite of years and years of attempted enlightenment on our part, it is still the popular conception that architects are the pretty-pretty boys who are concerned only with 'beauty.' I do not hold out any hope that this misconception can be radically corrected in the next thousand years, but I do feel that in the long run, ye shall be known by your works."



The St. Lawrence Seaway Authority will make its permanent headquarters in a seven-story office building (model shown above) to be built at Cornwall, Ont. The architects are Gordon S. Adamson and Associates of Toronto

ALBERTA'S BIDDING POLICY PROTESTED BY ARCHITECTS

The Alberta Association of Architects has objected to the provincial government's policy of opening tenders on public works projects in private. Meeting in Edmonton recently, the Council of the A.A.A. passed a resolution calling for a return to the traditional policy of opening such tenders in public.

The text of the resolution read:

"Whereas the expenditure of public money is involved, and

"Whereas the federal government, other provincial governments, civic governments and civic school boards are very meticulous about the practice of having the public present at the opening of tenders,

"Therefore be it resolved that the Alberta Association of Architects go on record as objecting to the policy of the Alberta government wherein tenders for public works projects are opened in private."

The council's discussion of government tendering practice followed a newspaper report from Calgary that Calgary architects and contractors had objected to the "secrecy" surrounding the opening of public works contracts.

Earlier in the year, the A.A.A. forwarded a brief to the Alberta government protesting the establishment of a provincial government architectural branch and stressing the dangers of abuse of such a plan.

ANOTHER RECORD PREDICTED FOR HOUSING CONSTRUCTION

A forecast that housing construction may reach a record high of 105,000 units this year is made in a Dominion Bureau of Statistics report for the first six months of 1955. This figure is about 3000 higher than last year's.

The Bureau reported that 57,997 houses were started in the January–June

(*Continued on page 32*)

A NEW CONCEPT OF MARBLE PRODUCTION

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Stallpack is a standardized marble toilet compartment produced to stock by assembly-line methods, then packaged in readiness for immediate shipment. It includes a polished Ozark Grey Veined marble partition, a solid-core natural-finish birch door, a set of chrome-plated hardware complete to the smallest screw, plus instructions for installation. One compartment (2 stiles, 1 partition, 1 door, and hardware) sells for $100 crated f.o.b. Carthage, Missouri. Each adjoining compartment is $95 crated f.o.b. Carthage.

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THE RECORD REPORTS

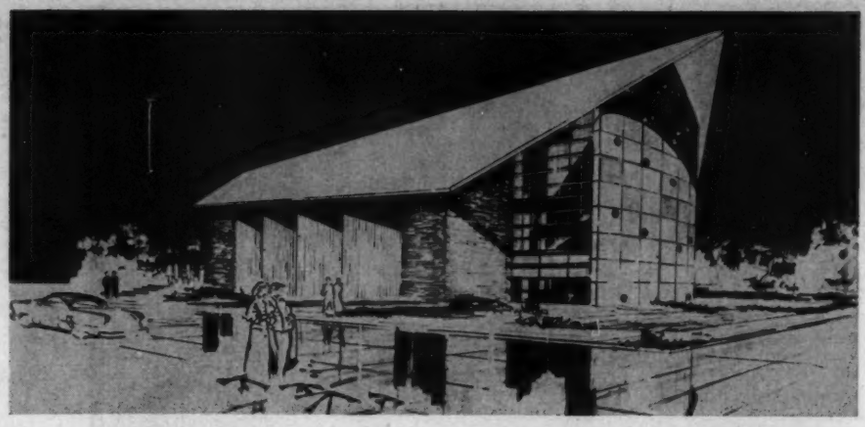
NEWS FROM CANADA

(*Continued from page 30*)

period. This is a 25 per cent increase over the 46,398 starts in the corresponding period in 1954. Completions reached 25,228, or 26 per cent of last year's first six-months total of 41,572.

Housing Loans Also Up

The volume of new home construction financed under the National Housing Act showed a 44.5 per cent increase during the first half of 1955 over the same period last year.



Project for the Grace United Church, Peterborough, Ont., comes from the office of Blackwell, Craig & Zeidler, Architects

Central Mortgage & Housing Corporation reports that undertakings to insure were issued for 28,062 loans valued at $412,123,349 between January 1 and the end of June. This compared with 17,011 loans worth $196,857,228 last year. Financing in the first half of this year provided for construction of 32,498 housing units as against 22,479 in 1954.

REPORT MANY ARCHITECTS TRAINED OUTSIDE SCHOOLS

A recent survey made by the Federal Department of Labor has shown that a high proportion of Canadian architects do not have university degrees. The report, based on responses from 1271 architects, showed that 21.1 per cent of them did not attend a university, and that another seven per cent attended but did not graduate. The 71.9 per cent for those earning degrees is smaller, says the report, than for any of the fields of science of engineering.

At the post-graduate level, the proportion of architects with a master's or doctor's degree is also lower than for any of the scientific or engineering professions in the departments' technical personnel register.

The survey also showed that nearly 60 per cent of the architects listed building design as their field of specializing; another 14.6 per cent considered planning their specialty, and 12.4 per cent listed organization and administration of building projects.

Designing and drafting occupy a little more than half of the architects registered. Work at the executive and managerial level is the main activity of

(*Continued on page 36*)

Here's professional Color Styling Service for You

In this complete color planning guide for Wood-Metal equipment you get the professional services of color consultant Elizabeth Burris-Meyer. In addition to the new color and natural stain samples, the kit contains numerous complete color plans—for cabinets, walls, counters and floorings. (Manufacturers' pattern and color numbers are listed for easy identification.)

Here's a combination that will facilitate your work—the "Color Chords" planning guide and the new Wood-Metal catalog with complete specifications for Wood-Metal cabinets, casework and furniture. Ask your Wood-Metal representative or write:

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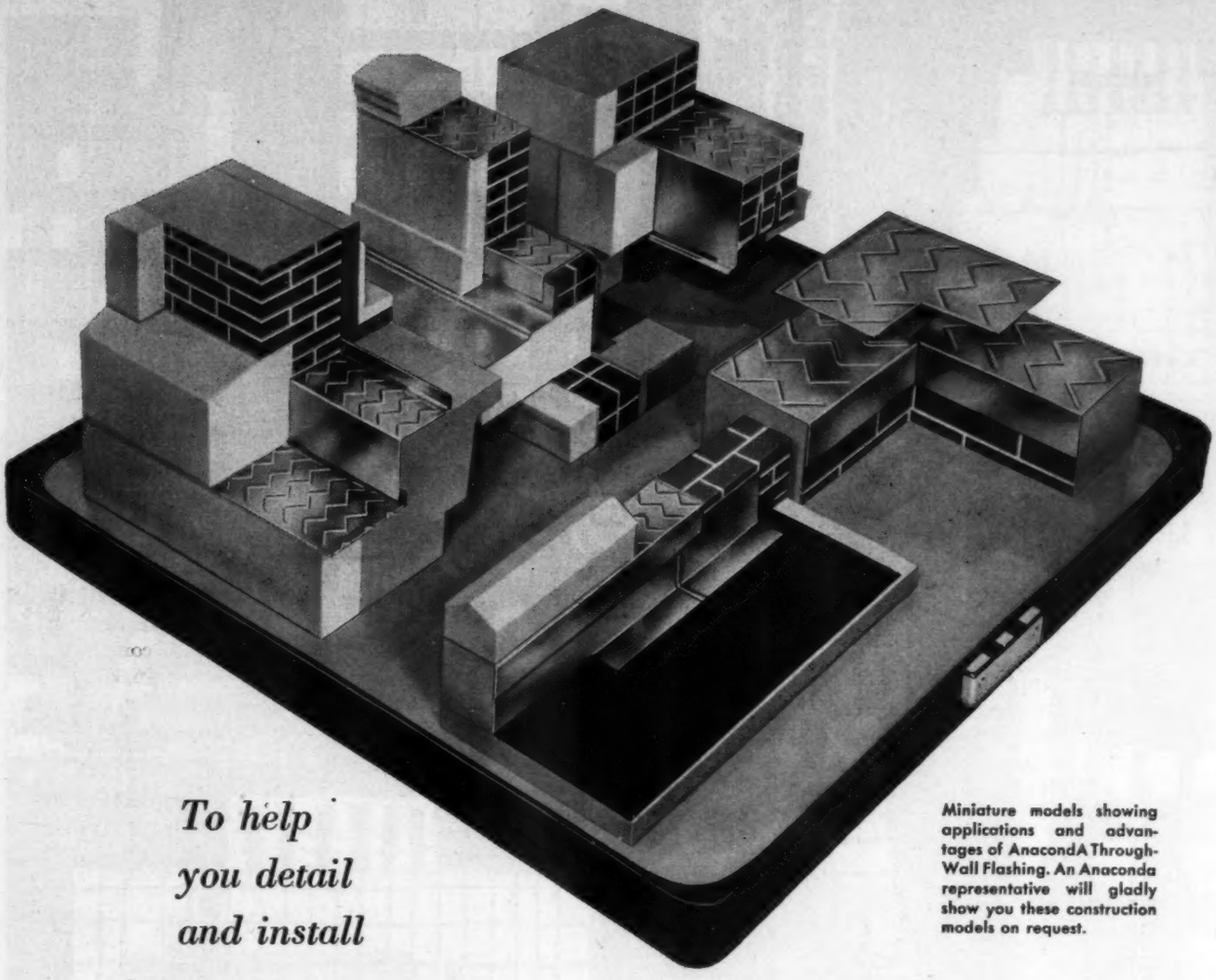

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Miniature models showing applications and advantages of AnacondA Through-Wall Flashing. An Anaconda representative will gladly show you these construction models on request.

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The greatest danger of water penetration in masonry construction is above the roof line. The new edition of "Anaconda Through-Wall Flashing" concentrates attention in this critical area. This publication, with its clear, detailed illustrations, shows you how you can provide complete protection, easily and economically. And you, in turn, get the protection of sound engineering when you use AnacondA Through-Wall Flashing, in these ways:

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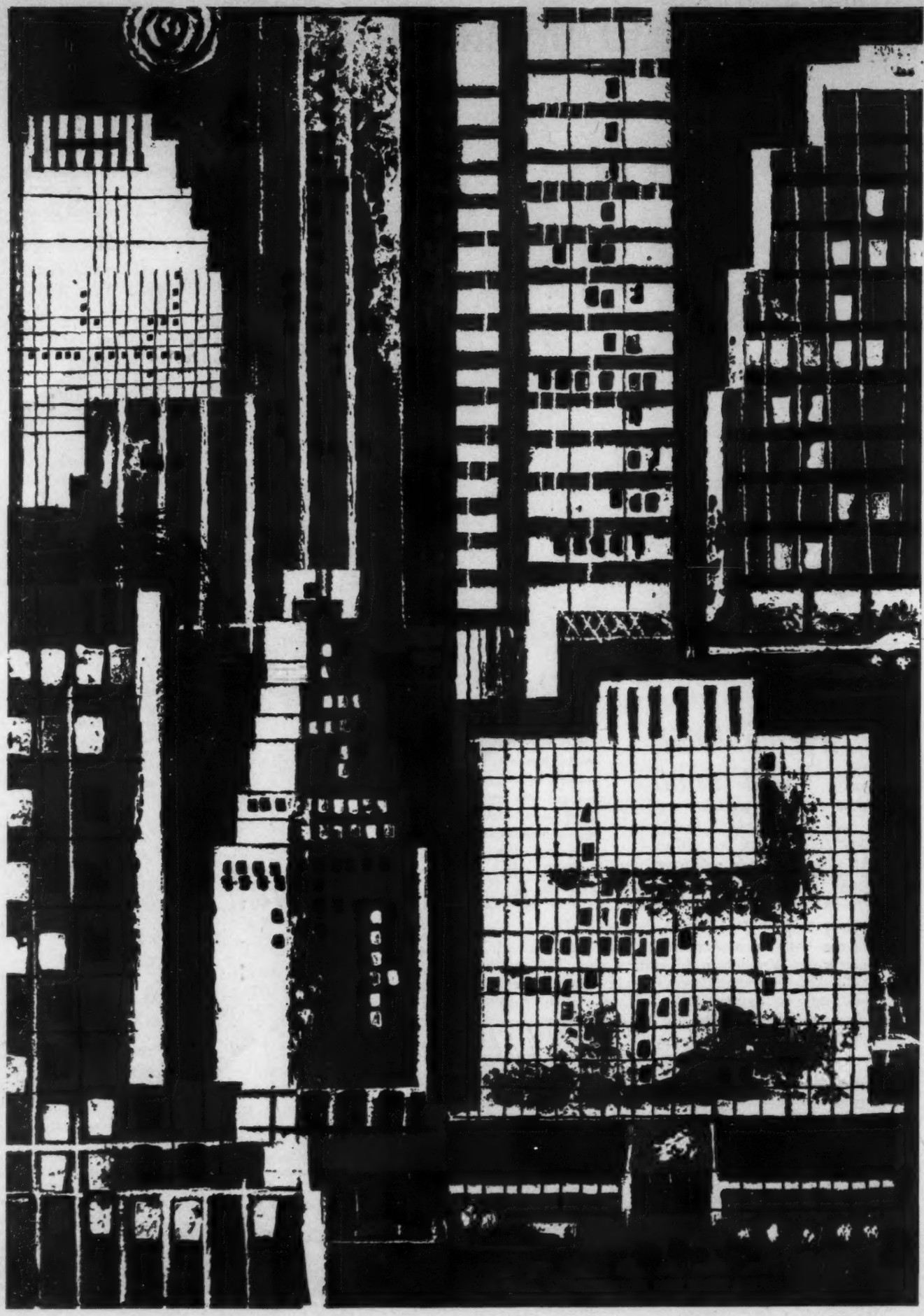

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SKYLINE OF ALCOA ALUMINUM

2nd National Bank Building, Houston, Texas. *Architect:* Kenneth Franzheim, A.I.A., Houston, Texas; *Contractor:* W. S. Ballows Construction Co., Houston, Texas; *Aluminum:* General Bronze Corporation, New York, New York.

99 and 100 Park Avenue, 260 and 261 Madison Avenue, 60th and Madison Avenue, New York, New York; the Alcoa Building, Pittsburgh, Pennsylvania; Equitable Life Insurance Society Building, Milwaukee, Wisconsin. And now, the 2nd National Bank Building, Houston, Texas. These are a few of the many aluminum sheathed skyscrapers General Bronze Corporation has raised in five years. They form a sky line of which any city could be proud.

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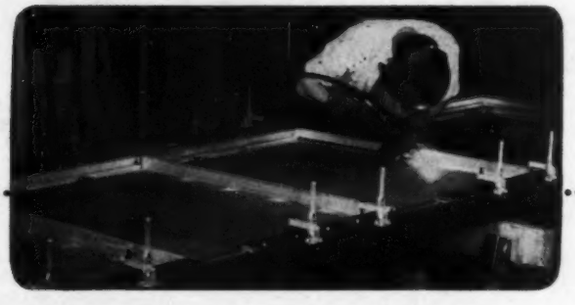

Welding curtain wall panel for 2nd National Bank Building at General Bronze Corporation's Garden City, Long Island, plant.

General Bronze testing tower with panel from 2nd National Bank Building ready for air and watertightness test.

YOUR GUIDE TO ALUMINUM VALUE

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THE RECORD REPORTS

NEWS FROM CANADA

(*Continued from page 32*)

another 20 per cent, and more than two-thirds of the architects are chiefly engaged in consultive work.

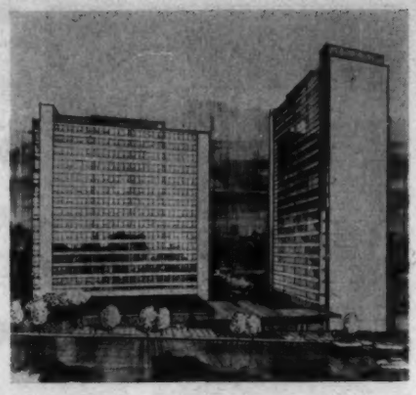
With the exception of civil engineers, the percentage of architects in the 61–65 age group is considerably higher than for any of the other scientific and engineering professions. The survey found that on the whole architects are fairly evenly distributed among the various age groups.

Geographically speaking, Ontario and Quebec combined account for approximately 72 per cent of the total group.

ARTS COUNCIL REQUESTS FEDERAL AID TO MEMBERS

John C. Parkin, Toronto architect and president of the Canadian Arts Council, has issued a new appeal for a national program to aid arts groups.

Each of the 16 societies holding active membership in the Canadian Arts Council, which represents some 10,000 architects, sculptors, musicians and other artists, must depend to some extent upon advice or financial help from corporations and executives. It is felt that the time and efforts of executives could be utilized to greater advantage if they were relieved of fund raising pressure.



Now abuilding in Vancouver, Marwell Apartments were designed by Sharp & Thompson, Berwick, Pratt, for single men and women and working couples

"We're all ardent private enterprisers," Mr. Parkin said, "but we are sadly lacking in patrons and the Federal government is the only place for us to go. We represent an 'industry' of 10,000 creative people and we're asking no more than do the butter producers or the wheat growers."

TORONTO STUDENT TAKES A.I.A. MEDAL AT HOWARD

Richard L. Lawrence, Toronto, who recently graduated first in his class at Howard University's School of Architecture, at Washington, D. C., received one of the American Institute of Architects' School Medals. He was also awarded the senior medal for excellence in design.

NEWS NOTES

The new 12-page **standard form for cost plus contracts,** jointly approved by the Royal Architectural Institute of Canada and the Canadian Construction Association, is now ready for use; three years were consumed in revising the document, first published 24 years ago. . . . Entries for the forthcoming **Massey Medals for Architecture** competition must be received by the R.A.I.C.: office, 88 Metcalfe St., Ottawa 4, Ont., on or before October 18; the opening of the exhibition and announcement of awards is scheduled for November 18

(*Continued on page 40*)

Standard Huntington patterns blend harmoniously with pre-built units in University of South Carolina dormitories. (Architect: Lyles, Bissett, Carlisle, and Wolff).

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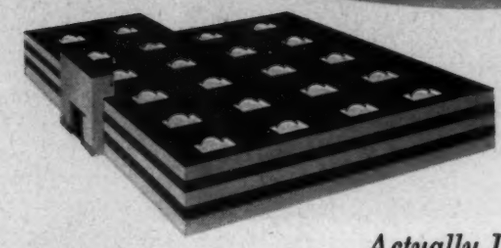

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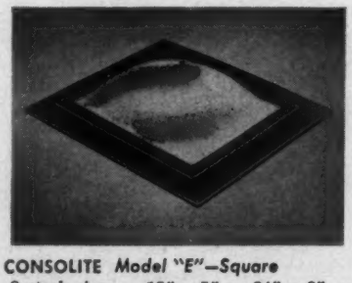
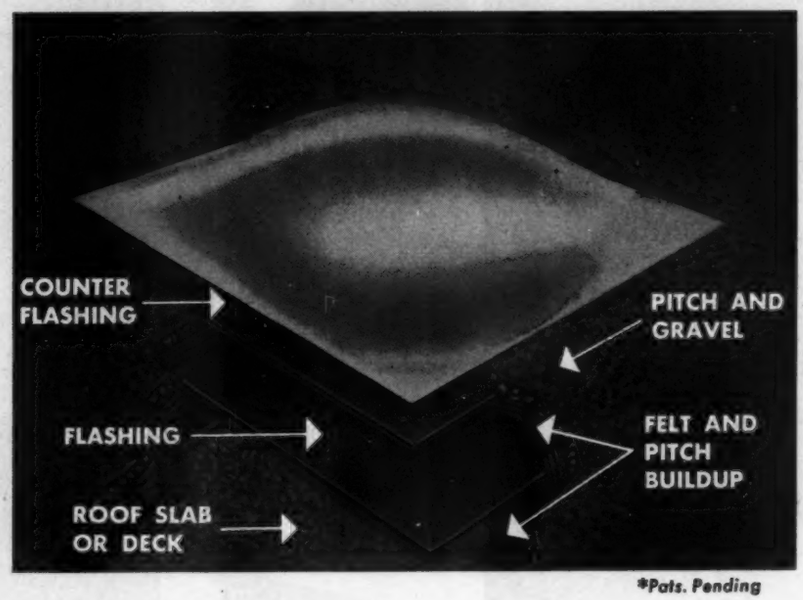


CONSOLITE *Model "E"—Square*
3 stock sizes — 18" x 5" — 24" x 6" — 36" x 7".



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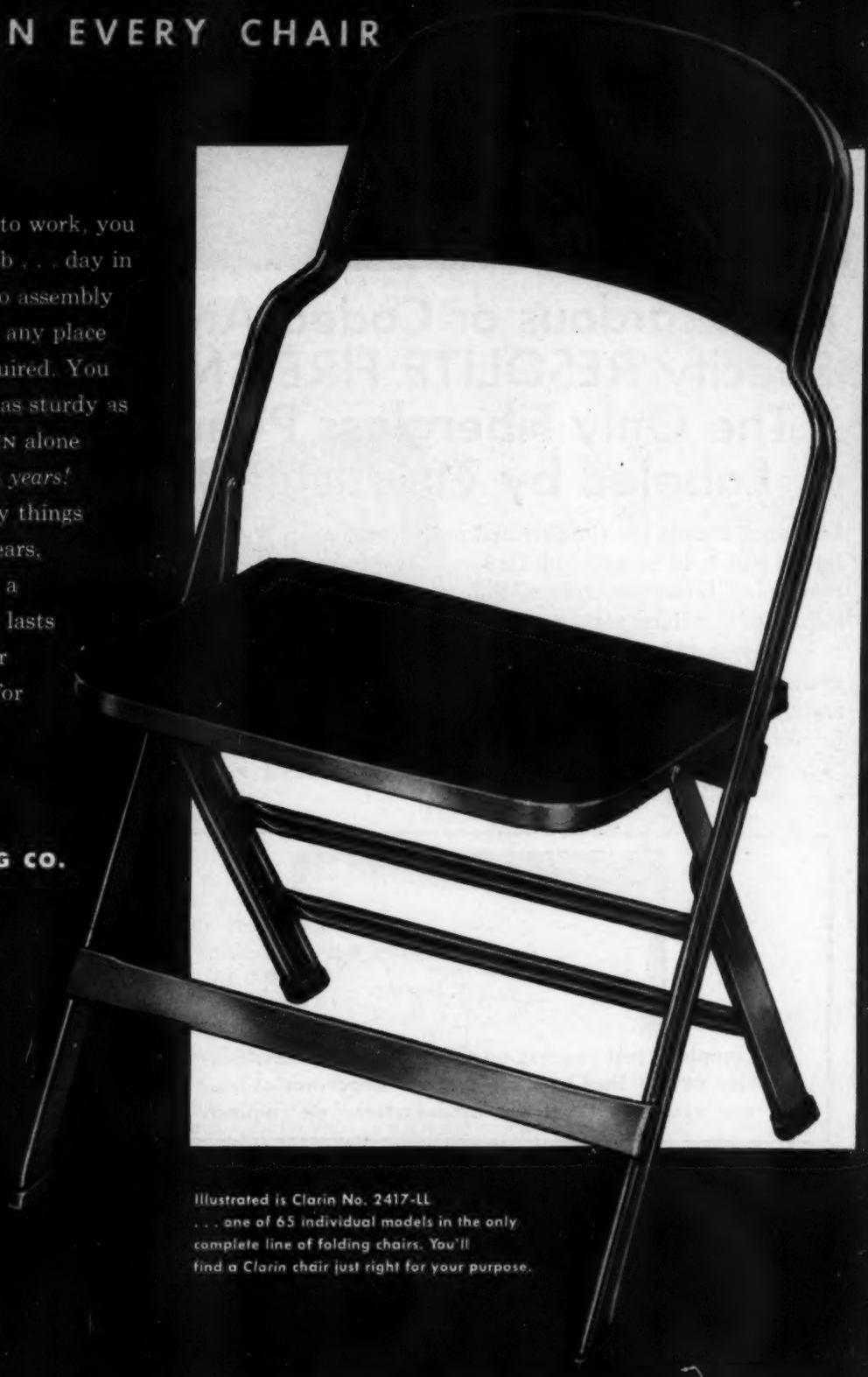

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THE RECORD REPORTS

NEWS FROM CANADA

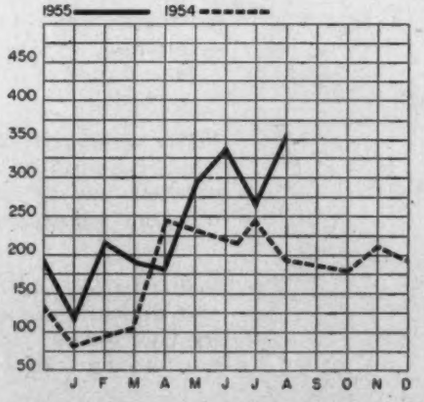
(Continued from page 36)

at the National Gallery of Canada. . . . The **49th annual assembly of the R.A.I.C.** will be held at Banff Springs Hotel, Banff, Alta., June 6–10, 1956. . . . Notice of **openings in Central Mortgage & Housing Corporation's** architectural department has been sent to all R.A.I.C. members; this department is part of CMHC's recently organized Development Division, which is also concerned with economic research, community planning, public housing, developmental work in housing design and construction, and the validation of building materials. . . . The **London Chapter of the Ontario Association of Architects** has elected to office for the coming year: J. D. McCullough, president; R. E. Murphy, vice president; R. P. Bruist, secretary; R. O. McTavish, treasurer; John G. Magee and R. E. Knowland, representatives on the London and Suburban Planning Board. . . . Applications to establish **two new chapters** have been sent to the O.A.A. Council — one from architects at "the head of the lakes," the other from northern Ontario. . . . An **employment register for draftsmen and architects' assistants** has been established by the Ontario association; the register will be kept at the Toronto headquarters building.

CORRECTION

Architects for the Peterborough Memorial Community Center (AR, July 1955, p. 32), incorrectly identified as Black, Craig & Zeidler, should have been given as Blackwell, Craig & Zeidler.

Contracts Awarded: Comparative Figures *
(in $ million)



* Compiled by the editor and staff of *The Building Reporter*, from information collected by MacLean Building Reports

(More news on page 44)

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3. With smaller, shorter, simpler pipes and mains, and difficult piping factory-assembled within the Syncretizer unit ventilators, labor costs at the site are reduced. *Saves on installation.*

A school can SAVE, yet can HAVE the last word in thermal comfort

Groups of classrooms or entire wings are arranged in series-loop circuits. The copper tubing of the Wind-o-line radiation is the only required supply and return piping for the Syncretizer ventilating units. System water temperature is maintained in direct relation to outdoor temperatures: the Syncretizer control of room temperatures is improved; Wind-o-line protection against window downdraft and bodily heat loss is always related to actual needs. Without other investment, this equipment maintains safe overnight building temperatures. The whole amazing story is told in Publication 104.

Nesbitt SERIES WIND-O-LINE SYSTEM

Made and sold by John J. Nesbitt, Inc., Philadelphia 36, Pa. • Sold also by American Blower Corporation

CLEAR PRISMATIC GLASS

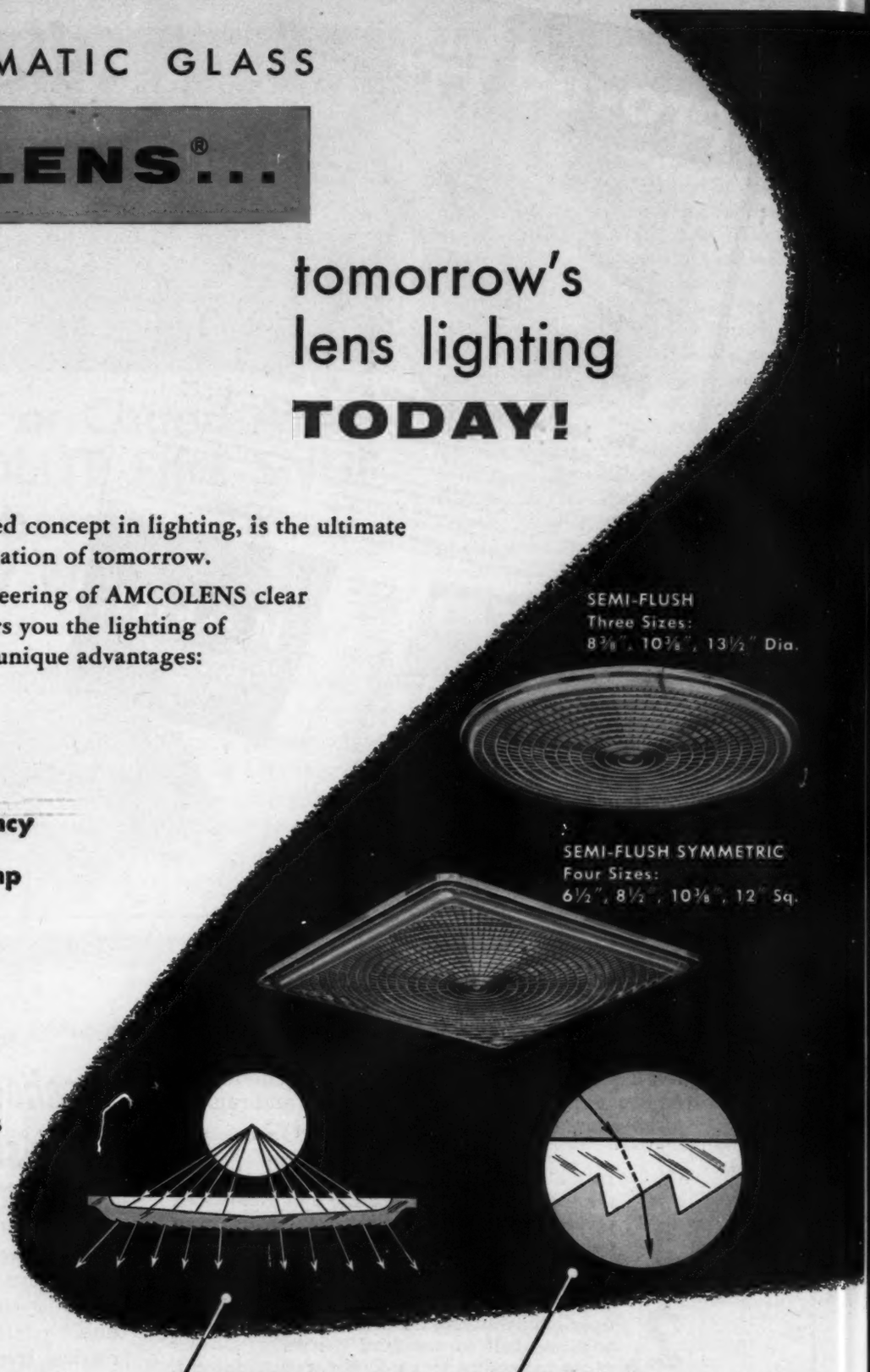
AMCOLENS®...

tomorrow's lens lighting TODAY!

AMCOLENS, an advanced concept in lighting, is the ultimate for the improved illumination of tomorrow.

The precision engineering of AMCOLENS clear prismatic glass lens offers you the lighting of the future with all these unique advantages:

- **Crystal clarity**
- **Undiminished light transmission efficiency**
- **Unaltered white lamp light transmittance**
- **Precise light direction control**
- **Predetermined light distributions**
- **Minimum brightness in glare zone**
- **Edge-light on ceiling for contrast relief**



This enlarged segment of Amcolens illustrates prism detail. AMCOLENS utilizes clear glass prisms, the most exact means known to science for controlling the direction of light.

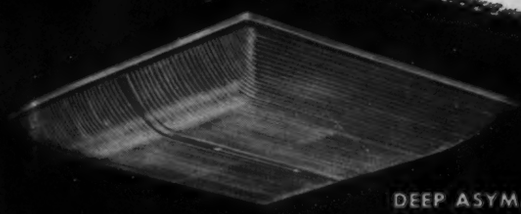
A cross section of a typical Amcolens shows control of light. Precision engineering achieves multiplied useful light utilization below 60° with minimized glare zone brightness.

AMCOLENSES are the result of original ART METAL lens research and are available only in ART METAL complete lighting equipments.

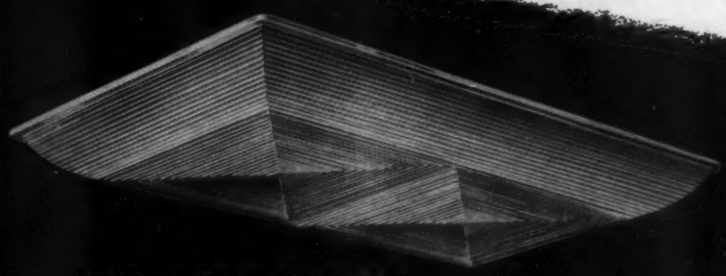
AMCOLENSES ARE ANOTHER *Lighting Research* DEVELOPMENT OF ART METAL

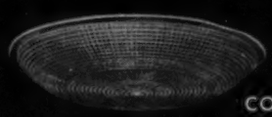
18 AMCOLENSES

are precision engineered
for specific lighting applications.



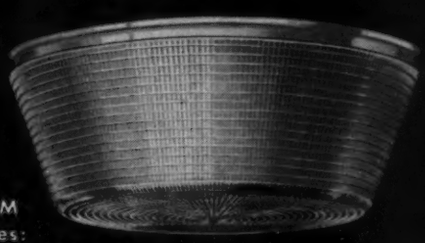
DEEP ASYMMETRIC
One Size:
10⅜" Sq.



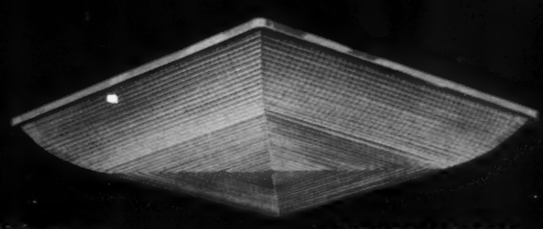


CONVEX
One Size:
7½" Dia.

TWO-LIGHT DEEP SYMMETRIC
One Size:
9½" x 16½"



LENSDRUM
Three Sizes:
9½", 11⅝", 13⅜" Dia.

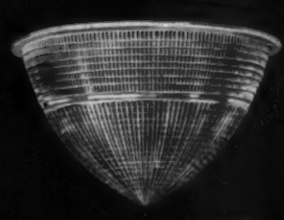


DEEP SYMMETRIC
Three Sizes:
8½", 10⅜", 12" Sq.

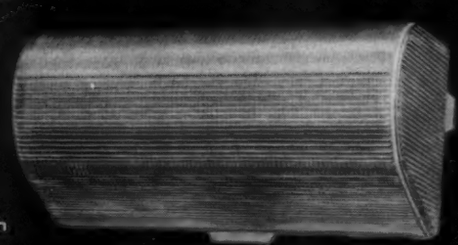
May we send the new catalog?

ART METAL Catalog 255, dedicated to the advancement of incandescent lighting through original research development, provides detailed information on Amcolens, plus factual data on all ART METAL lighting equipment with unbiased test data on lighting performance, evaluated by Electrical Testing Laboratories, Inc.

Write to:



AREALENS
One Size:
7½" Dia.



WALLENS
One Size:
11½" Length

The **ART METAL** *Company*

CLEVELAND 3, OHIO

ALL U. S.-AIDED BUILDING BUT SCHOOLS UP FOR 1955

The Administration's midyear review of the fiscal 1956 budget indicated that all categories of government-aided construction but one (schools) are up over fiscal 1955. Federal grants for building schools in "Federally impacted" areas are down $14 million to a total of $116 million.

Spending for military public works showed a rise from both fiscal 1955 and 1954. (The current figure is still below the $1.9 billion expended in fiscal 1953, however.)

Hill-Burton hospital construction spending this fiscal period jumped to $90 million, an increase of $17 million over 1955. Highways went to the highest figure in history, $740 million. The Army Corps of Engineers' outlays for Federal public works reached $567 million, a jump of $21 million over last year.

Other programs: Housing has an estimated obligational authority increase of $347 million, bringing the current program to $863 million; new authority for grants to construct local airports jumped by $42 million.

BUILDING INDUSTRY OFFERS ALL AID TO FLOOD AREAS

What was perhaps the greatest single mobilization of construction forces to cope with the ravages of a major peacetime disaster was well under way in the six flood-stricken Northeastern states last month.

The Army Corps of Engineers had every available man from both its civil and military organizations deployed on the emergency tasks assigned to it by the Federal Civil Defense Administration of removal of debris and other health and safety hazards and making temporary repairs to return essential public facilities to operation. Lieut.-Gen. S. D. Sturgis Jr., Army Chief of Engineers, called it "one of the biggest, toughest flood rehabilitation jobs since the one Noah faced after the Great Flood of Biblical days." He estimated damages in the floods trailed by Hurricane Diane August 18–19 at $1.5 billion.

The American Institute of Architects, through its president, George Bain Cummings, F.A.I.A., of Binghamton, N. Y., immediately offered "all possible assistance" of the Institute and its local chapters in the job of reconstruction. In a letter sent to the governors of each of the six affected states, Mr. Cummings said regional directors in each case would approach the governor directly to find out how the Institute could best be of service.

"Possibly the most valuable service we could render," Mr. Cummings noted, "would be in connection with the long-range community planning on which the rebuilding program should be based. Such a program could result in the creation of a better environment for living and for industry that would serve to enhance the value of the entire region. Also it might well avert or minimize future losses from storm, fire or other disaster."

In New England, which had the widest area of devastation, Regional Director Austin W. Mather of Bridgeport called a meeting on September 10 in Boston of the A.I.A's New England Regional Council, comprised of the presi-

(*Continued on page 382*)

FAR LOWER TEMPERATURE UNDER Karnak® ALUMINUM COATING

An exclusive combination of flat aluminum flakes and specially prepared asphalt provides unique cooling and protective qualities. The asphalt penetrates, grips and weatherproofs. *The aluminum flakes flow to the surface and flatten into an opaque, metallic shield that reflects heat, ultra-violet, even infra-red rays thus preserving the underlayers of roofing.*

A heat lamp applied equally to an asphalt shingle or composition roofing, one half of which is coated with Karnak Aluminum-Asphalt Coating, *shows a temperature under the coated side 50° lower than under the uncoated side.* This lower temperature not only assures a cooler area under this surface but also protects the roofing. The test shows that high heat breaks down the roofing structure on the uncoated half thus shortening its life.

The liquid applies easily, as supplied in the container, by spray or brush. ***Manufactured by Lewis Asphalt Engineering Corp., 30 Church St., New York 7, N. Y. Dept. 111.***

Look for the Warranty Seal

It guarantees 2 lbs. of aluminum pigment per gallon, assuring adequate aluminum to provide a good shield and hold it. Inferior coatings do not have this warranty.

50° LOWER BY TEST

Heat lamp application dramatically shows 50° lower temperature under the half of the shingle coated with Karnak Aluminum-Asphalt Coating.

© L A E Corp.

USE OTHER KARNAK PRODUCTS, TOO

Membrane Waterproofing Fabric • Asphalt Roof Coatings and Cements
Calking Compounds Asphalt Emulsions Tile Cement
Asphalt Paint Wood Block Mastic Joint Filler

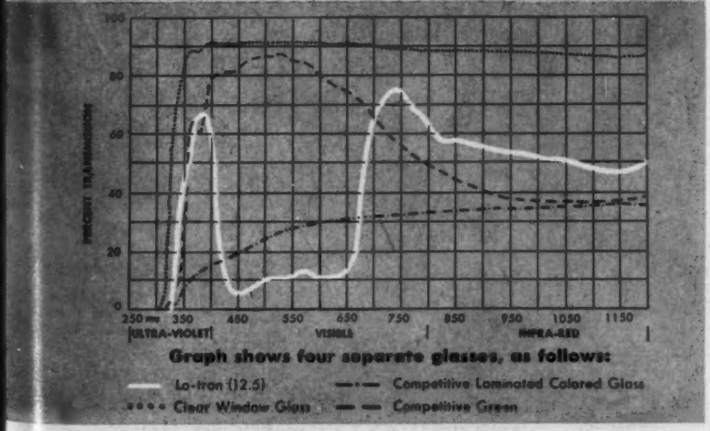
SUN GLASSES on BUILDINGS?

Yes...with

HOUZE Lo-Tran (12.5) GLASS

A three-pane strip of Lo-Tran at Cortez School, Covina, Calif., eliminates glare, permits students to face windows, and provides unrestricted outside viewing. Note the glare through the opened clear glass upper windows.
(Architect: H. L. Gogerty, F.A.I.A.D., Stewart Kerr, Associate)

Houze Lo-Tran vision strips in window completely eliminate glare which exists through clear glass window where arrow is pointing. Bright sunshine has completely "washed out" the red brick visible through the Houze view strips.



Graph shows four separate glasses, as follows:

— Lo-tran (12.5) —·— Competitive Laminated Colored Glass
···· Clear Window Glass — — Competitive Green

(Note)—Lo-Tran gives even transmission throughout the visible range of the spectrum (see chart) so that colors viewed through this glass are free of color distortion.

Glare-Proof CLASSROOMS, OFFICES, SHOPS, SKYLIGHTS

Now, new or existing buildings—in all parts of the country—can have glare-eliminating window glass.

Houze Lo-Tran, the ideal "see-out" glass, cancels "see-in" characteristics to almost zero. Lo-Tran was developed specifically to meet the "brightness balance" recommendations of the National Council on Schoolhouse Construction and many of the nation's outstanding illuminating engineers and school architects.

Produced in standard 38" or 42" x 60" sheets, Houze Lo-Tran Glass is easy to install—like ordinary window glass—requiring no special sash or sealant.

This amazing "Balanced Brightness" glass is AVAILABLE NOW through local dealers and distributors.

Why not put "Sun-Glasses" on your next building project with Houze Lo-Tran (12.5) Glass?

no color distortion

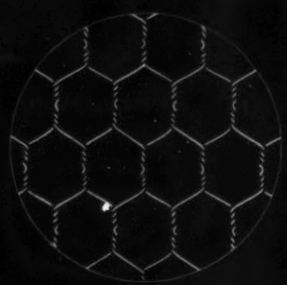
houze glass corporation

point marion, pennsylvania

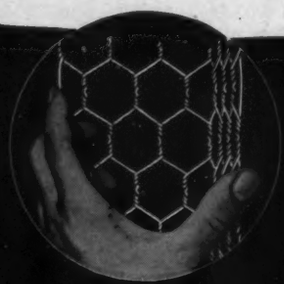
OLDEST AND LARGEST MANUFACTURER OF SUN GLASS LENSES

Write:
today for this 8-page catalog . . . it contains the technical information you want!

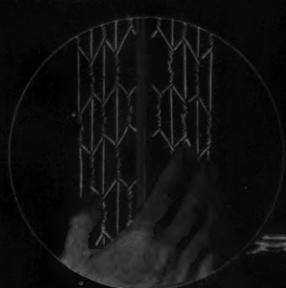
why invite FIRE?



KEYMESH lath for overall reinforcement. Made of galvanized woven wire. Especially recommended for ceiling construction.



KEYCORNER strip lath, preformed to fit snugly in corners. Lies flat when applied to joints. Galvanized to prevent rust streaks.



KEYBEAD corner lath with precision formed bead for outside corners. Open mesh assures strong, solid plaster corners.

you multiply fire resistance for pennies per square foot with

KEYMESH

Some types of walls and ceilings invite fire.

When you use lath and plaster, plus KEYMESH, you cut fire hazard immeasurably. Just compare the difference.

With frame construction, a ceiling with exposed joists is gone in 15 minutes. Finished with gypsum lath, lightweight aggregate plaster and Keymesh, it stands up an hour and 38½ minutes.

With open web steel joists, the ceiling fails in 7 minutes when joists are exposed. Add gypsum lath and 1″ of lightweight aggregate plaster over KEYMESH and the ultimate fire resistance is 4 hrs. and 26 min.

With most types of light construction you'll find that lath and plaster with KEYMESH reinforcement can make the difference between "heavy loss" and "light damage" to buildings. You can do this at negligible cost . . . for pennies per square foot of finished surfaces.

Firesafety is not the only advantage of using KEYMESH reinforcing lath. Beauty, durability, and economy must be part of everything you design. With Keymesh you get all these plus other important advantages for your clients such as lower insurance rates and complete adaptability for any type of decoration.

Before you specify or build again, weigh these facts.

Fire Test Results on various types of construction by authoritative Testing Laboratories

CEILING CONSTRUCTION WOOD JOIST FLOORS	ULTIMATE FIRE RESISTANCE	PROTECTION OF JOISTS
Exposed joists.	15 min.	None
Gypsum wallboard ⅜″ thick finished with casein paint.	25 min.	15 min.
Metal lath, ¾-in. sanded gypsum plaster 1:2 for scratch and 1:3 for brown coat.	45 min.	12 min.
Gypsum lath, ½-in. of gypsum lightweight aggregate plaster reinforced with **KEYMESH**-type reinforcing lath.	1 hr. 38½ min.	38 min.

WALL CONSTRUCTION ON WOOD FRAMING	ULTIMATE FIRE RESISTANCE
½″ fiberboard.	5 min.
Metal lath with ¾-in. sanded gypsum plaster.	15 min.
Tongue-and-grooved wood.	20 min.
⅝-in. perforated gypsum lath with ½-in. sanded gypsum plaster.	30 min.

CEILING CONSTRUCTION STEEL JOIST FLOORS	ULTIMATE FIRE RESISTANCE
Ceiling unprotected.	7 min.
Ceiling of gypsum lath and ½″ lightweight aggregate gypsum plaster.	55 min.
⅜″ gypsum lath covered with 1½″ of gypsum plaster with lightweight aggregate.	1 hr. 43 min.
Gypsum lath and ½-in. gypsum plaster with lightweight aggregate reinforced with **KEYMESH**-type galvanized reinforcing lath.	3 hrs. 28 min.
⅜″ gypsum lath, reinforced with 20-gauge, 1″ **KEYMESH**-type lath; then covered with only 1″ of lightweight aggregate gypsum plaster.	4 hrs. 26 min.

STEEL COLUMNS	ULTIMATE FIRE RESISTANCE
Structural Steel, unprotected 10 sq. in. min. area of steel.	15 min.
Gypsum lath, one layer, ⅜″ perforated, ½-in. gypsum plaster mixed with lightweight aggregate.	1 hr.
One layer ⅜-in. perforated gypsum lath, 1-in. thickness of gypsum plaster, 100 scratch, 100 brown, mixed with lightweight aggregate.	2 hrs.
Two layers ½-in. long-length gypsum lath, 1½-in. gypsum plaster mixed with lightweight aggregate. *Lath wrapped with one layer 20 gauge galvanized 1-in.* **KEYMESH**-*type reinforcing lath.*	4 hrs.

KEYSTONE STEEL & WIRE COMPANY

Peoria 7, Illinois

KEYMESH • KEYCORNER • KEYBEAD • KEYWELD
KEYSTONE NAILS • KEYSTONE TIE WIRE
KEYSTONE NON-CLIMBABLE AND ORNAMENTAL FENCE

Keymesh is a registered Trademark of the Keystone Steel & Wire Company

ASPEN INTERNATIONAL DESIGN CONFERENCE: FIFTH EDITION

***Michael Farr, young editor of the English magazine Design, here gives his impressions on this year's Aspen conference in a special report for the* RECORD**

Michael Farr with graphic arts designer Will Burtin, permanent program chairman of the Conference

There could hardly be a better setting for architects, designers, painters and sculptors meeting in the mountain valley of Aspen, 7800 feet up in the Rockies. Distant snow peaks make a startling backdrop in the clear air, but there was also local interest for the more sophisticated delegates. Aspen itself has long forgotten the days of the silver rush, but many of the town's older buildings bear all the marks of hasty architecture sprung up to meet the needs of sudden prosperity. More deliberately, and since the war, new buildings of considerable interest have been added to the town and its outskirts. There are several small houses and studios for the resident artistic community and Herbert Bayer's new group of chalets for Conference visitors with a figure-eight shaped swimming pool, covered by one of Fuller's domes of tubular metal and painted canvas, are fully indicative of the new cultural prosperity that has hit the town.

The International Design Conference, the fifth in the series, welcomed a record attendance of 542 delegates including wives. Contingents from the west coast were predominant, but architects, designers, educators and painters and just plain businessmen came from all corners of America. The five-day Conference debated the theme "Crossroads — What are the Directions of the Arts?" — and debated it with a vigour that surprised this visitor from England. There were microphones set among the audience in the enormous circus tent designed by Saarinen and the stream of useful contributions from the floor made it clear that the unusual procedure of handing out the morning's papers during the afternoon before was a notable success. Not only did this make it unnecessary for the panel speakers to deliver their talks in full before question time began, but it brought from the audience generally a well-digested series of questions.

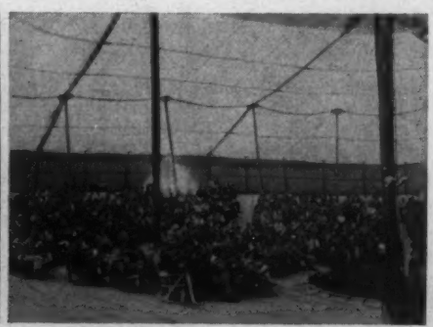
A well reasoned contribution to "Communication," the subject for the first day, was given by Herbert Bayer. Talking of the need for a language of vision, Bayer warned against contemporary superficialities. "Our times seem to be especially significant in accepting only the surface expressions of new ideas and not the truth. Commercialism is quick to make fashions out of philosophies. So it is with our subject. Superficial expressions are being disseminated to a disquieting degree: modern design is when you take an amorphous shape; modern design is when you take a texture; modern design is when you make a vertical-horizontal composition, when you use dynamic symmetry instead of symmetry." Among Bayer's positive contributions was his plea for a redesigned alphabet to embrace simplified spelling and our knowledge of phonetics.

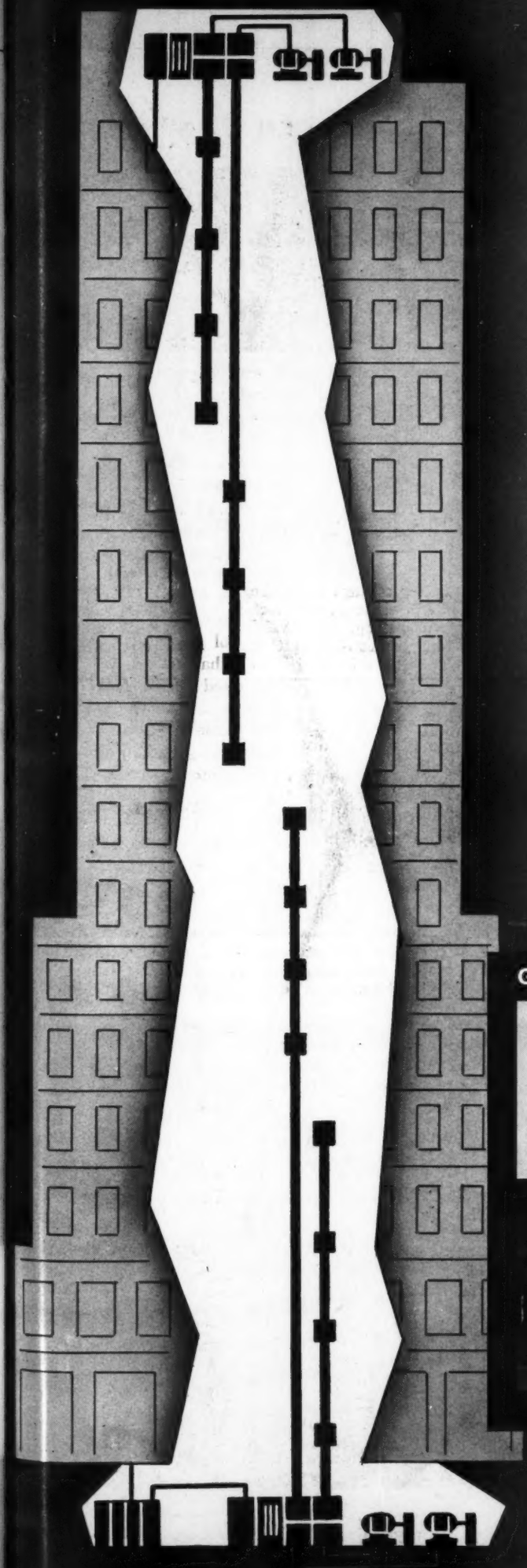
On the same day Sol Cornberg of N.B.C. Television said that his chosen medium had added "speed and saturation" to the art of communication. Architects might well ponder his prophecies, for he claimed that automation can translate a design into an actual product quickly enough for mass-communication, particularly television in color, to test the product in the individual environment of the potential purchaser. By this means, he claimed that a market reaction can be obtained before capital investments are made in tools. Perhaps shortly we shall see packaged houses to suit all sites ready, at the drop of a hat from the television company, to stream forth into nationwide distribution.

One of the highlights of the Conference came when Harry Bertoia talked on his "World of Art." "Perhaps the direction I have been most interested in indicates an assemblage of components held together as if by a magnetic force. It is desirable to leave the equation some-

(Continued on page 338)

"a figure-eight shaped swimming pool covered by one of Fuller's domes of tubular metal and painted canvas"; below, "the enormous circus tent designed by Saarinen"





USE TABS FOR DETAILS OF . . .

POWER DISTRIBUTION

SAVINGS

SYSTEM

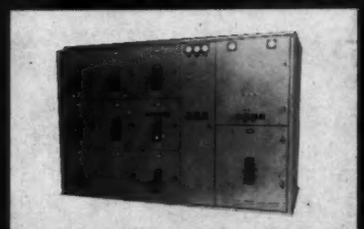
Save up to 25% with G-E equipped power distribution systems for commercial buildings

YOU BENEFIT THREE WAYS FROM G-E EQUIPPED 480Y/277-VOLT DISTRIBUTION:

1. **First-cost savings**
2. **Expansible, efficient system**
3. **Single equipment source**

This system can help designers, owners, and builders save 10 to 25 per cent on initial costs of distribution systems. Higher-voltage distribution provides an effective answer to today's heavy electrical loads. Its flexibility and economy allow realistic anticipation of the even larger loads of tomorrow.

GREATEST SAVINGS FROM . . .



PROTECTIVE DEVICES

RISERS AND FEEDERS

INSTALLATION

LARGE MOTORS AND CONTROL

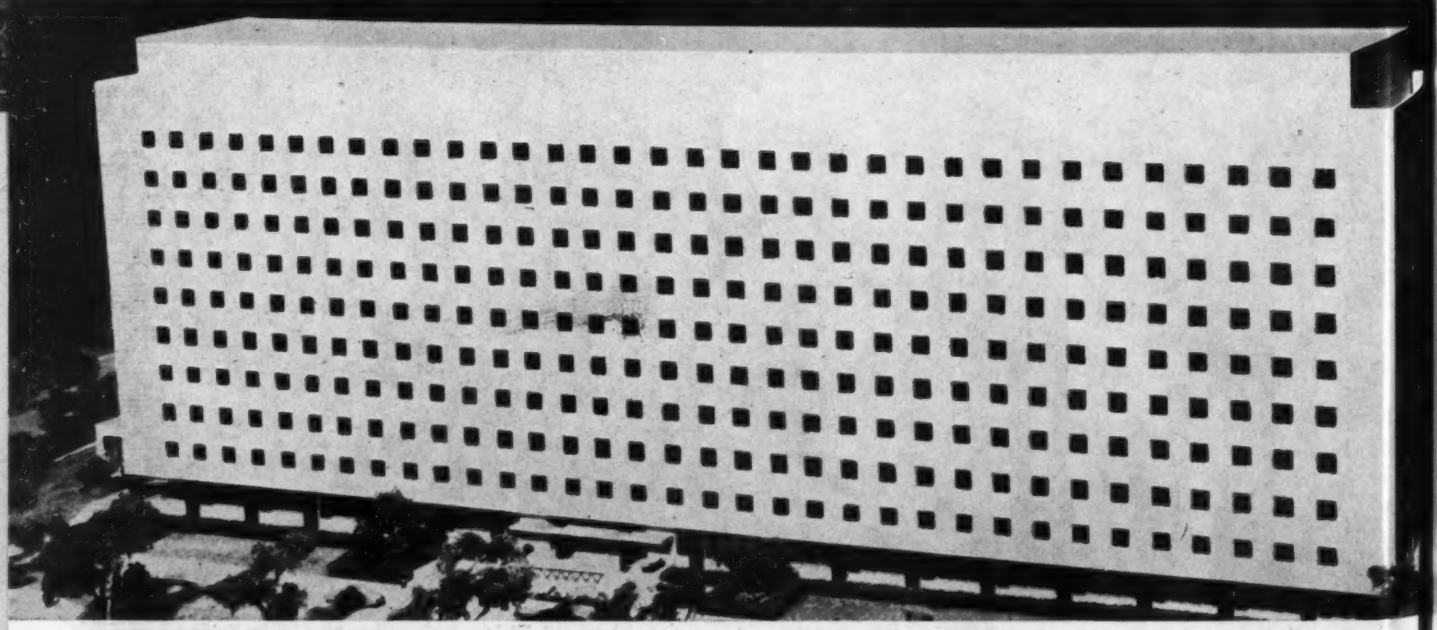
Progress Is Our Most Important Product

GENERAL ELECTRIC

FOR GUIDE TO YOUR OWN SAVINGS MAIL COUPON ON LAST PAGE OF THIS AD

$1,500,000 SAVINGS on equipment were obtained when system was selected for New York Coliseum. Combining 365,000 sq. ft. of display space with 26-story building presented unique opportunities for savings with the higher-voltage system. Leon and Lionel Levy, architects; Guy B. Panero Engineers, consulting engineers; Walsh-Fuller-Slattery, general contractors; Jackson-Livingston, electrical contractors.

$12,000 SAVINGS resulted at Twin Falls, Idaho High School with 480Y/277-v system even though 120-v load was large percentage of total. One of the earliest applications of new system, school provides ideal example of savings possible in small horizontal buildings. School's demand totaled only 600 kva.



$20,000 SAVINGS were obtained with 277-v lighting in Pennsylvania's new office building for the Dept. of Property & Supplies, Harrisburg, a Gen. State Authority project. Here system proves value in longer, lower building. Lacy, Atherton and Davis, architects and engineers; The Howard P. Foley Co., electrical contractors.

POWER DISTRIBUTION

SAVINGS SYSTEM

Higher-voltage systems can pay off for you as they did in these four buildings

Average electrical loads in commercial-type buildings have grown to equal many in industrial plants (approximately 10 volt-amperes per sq. ft.). With increased use of air conditioning, electronic equipment, appliances, and better lighting, loads will continue to grow.

ARCHITECTS, CONSULTING ENGINEERS, contractors, and owners must provide a first-class power distribution system to meet today's demands and anticipate tomorrow's needs—yet keep costs within reason.

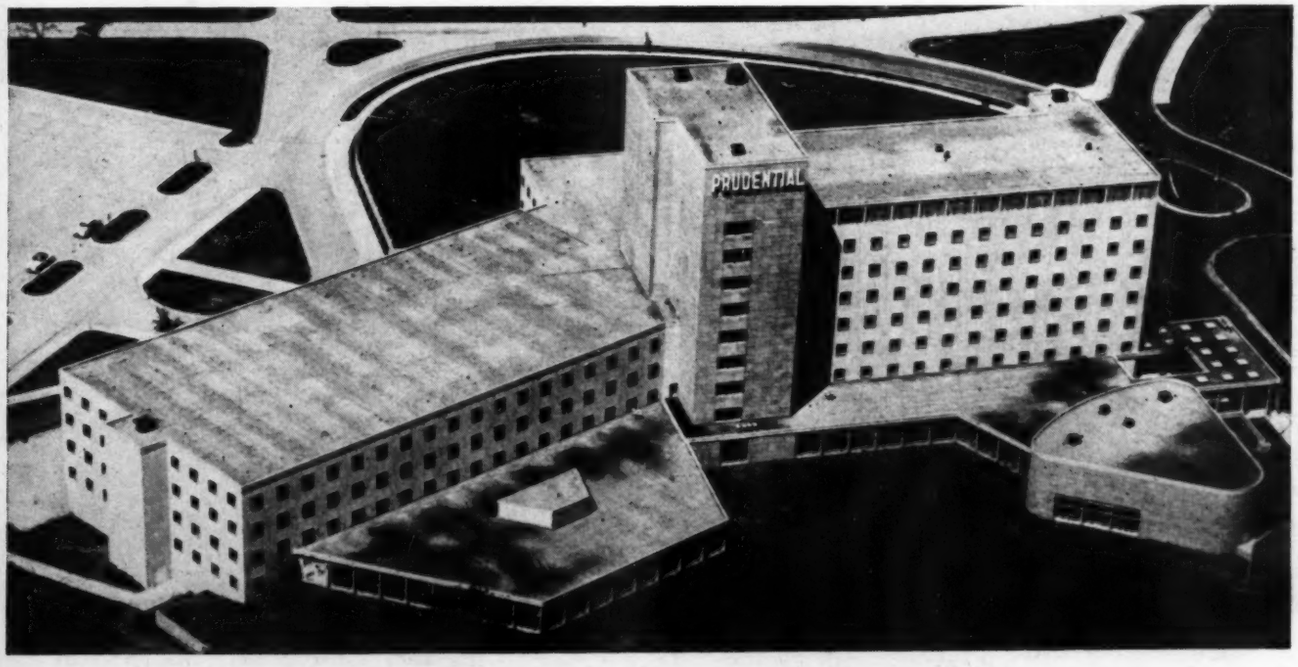
ONE SOLUTION IS TO SELECT 480Y/277-volt power systems when remodeling old or constructing new buildings. The success of this G-E equipped system in the four buildings illustrated is dramatically indicated by the large savings made.

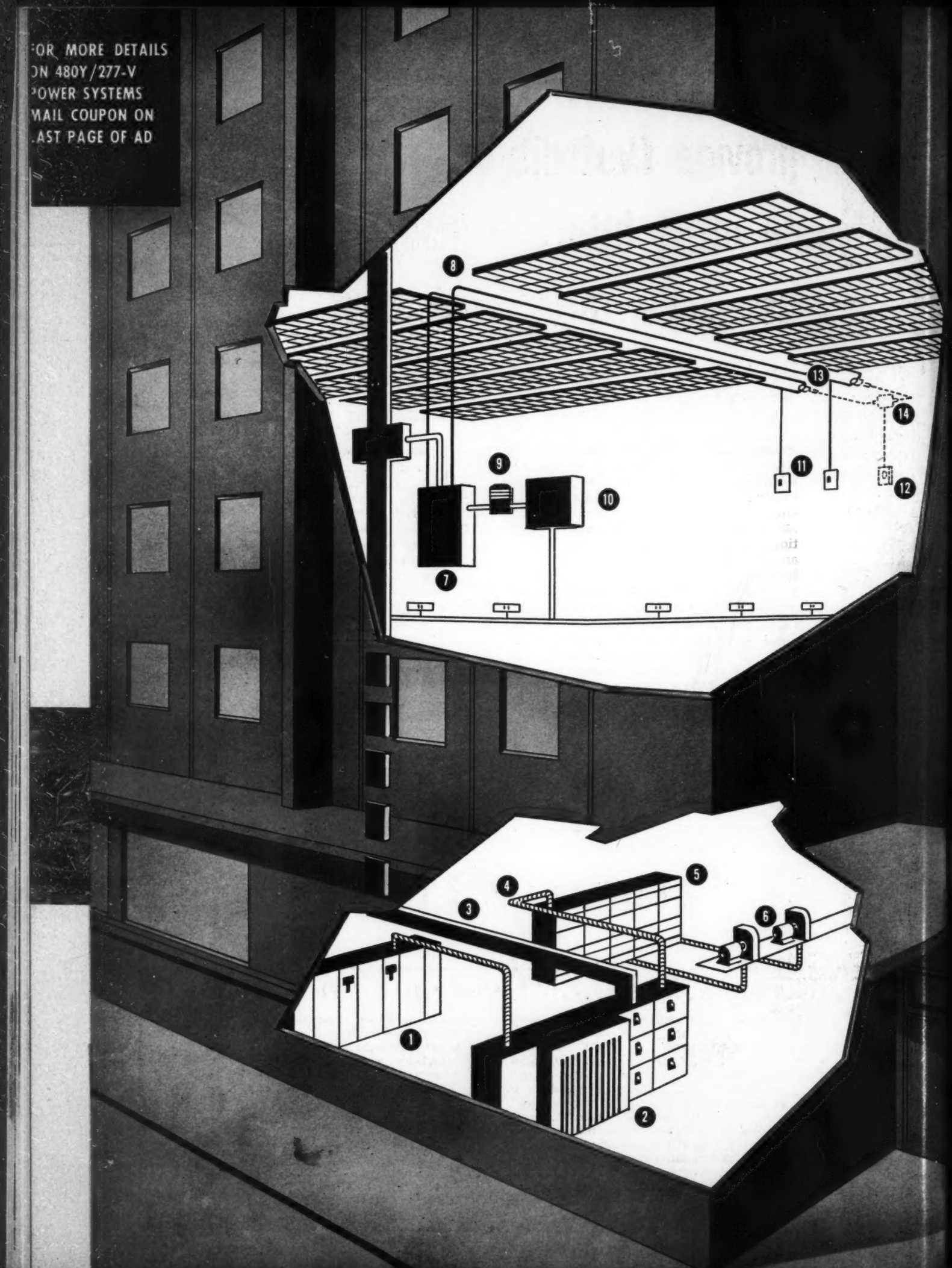
Comparable savings with this system exist when 33 to 50% of building load can be served direct from system voltages and when feeders average 200 feet in length. For detailed cost and savings information, use coupon on last page of this ad, or contact your G-E Apparatus Sales Office.

SEE HOW THIS SYSTEM WORKS

GENERAL ELECTRIC

$50,000 SAVINGS came from using system at Prudential Insurance Co. office building, Minneapolis. Rambling wings and 10-story tower make system ideal. Magney, Tusler & Setter, Inc., architects and consulting engineers; C. F. Haglin & Sons, general contractors; Electric Repair & Const. Co., electrical contractors.




FOR MORE DETAILS
ON 480Y/277-V
POWER SYSTEMS
MAIL COUPON ON
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G-E higher-voltage systems provide flexibility to meet future demand, use lower-rated equipment to supply larger loads

Because volumetric and floor space in commercial-type buildings is so valuable, substations usually must be located in basements and penthouses. This can mean long runs for secondary feeders. The greatest savings with higher-voltage distribution come from ***halving*** either the number and/or size of these feeders and their branch circuits.

SAVINGS CAN AMOUNT TO $30 PER KVA of demand. Conductors carry two to four times the power they could at 120/208Y volts—meaning fewer and smaller circuits and great savings in copper needed throughout system. In addition, lower rated and fewer circuit breakers are needed since lower-current distribution at higher voltage allows each breaker to serve more kva load. Motors above 500 hp cost less at 480 volts. Motor control at the higher voltage costs less for any motors. Higher-voltage distribution also cuts feeder voltage drop, watt losses. Because less equipment and smaller equipment is needed, installation is easier, less expensive. Much valuable space is saved.

When time comes to expand capacity, original savings and advantages are repeated. More new equipment can be installed in space that would have been used initially with a 120/208Y-volt system. When modernizing old buildings it is often possible to ***retain original conductors*** and conduits, switch to higher voltages and increase capacity.

120-VOLT POWER IS PROVIDED by small low-cost transformers. Greatest savings occur when 277-volt lighting is used, ***but*** studies show big savings may still exist even if ***all*** lighting operates at 120 volts supplied from small transformers. For full information on this economical, flexible system, send coupon on last page of this ad, or contact your G-E Apparatus Sales Representative.

SEE STANDARD EQUIPMENT FOR USE IN THIS SYSTEM ▶

GENERAL ELECTRIC

HERE'S HOW 480Y/277-V SYSTEM FITS A TYPICAL BUILDING

Cutaway shows components of higher-voltage system for building supplied with primary power by the utility.

Incoming power is brought through metal-clad switchgear (1) and distributed to unit substations (2) which step voltage down to required 480Y/277 volts. Busway or cable risers (3) carry power up to each floor while feeders (4) distribute it to motor control centers (5) for the air-conditioning, elevator and ventilating-fan motors (6).

On each floor power runs from risers to panelboards (7) supplying 277 volts for lighting (8). Circuit also runs from this panelboard to small dry-type transformer (9) which furnishes power through a second panelboard (10) to the 120-volt floor circuits.

Lighting power may be safely controlled by conventional wall switches rated 20 amps, 277 volts (11) or by 24-volt remote-control switches (12). If remote control is used, relays (13) are required to accomplish switching and small transformers (14) to supply 24-volt power to remote-control switch for activating relays.

If secondary power (utilization voltage) is supplied by the utility, system begins at low-voltage switchgear section of substation.

FOR MORE DETAILS ON G-E EQUIPMENT FOR POWER SYSTEMS MAIL COUPON ON LAST PAGE OF AD

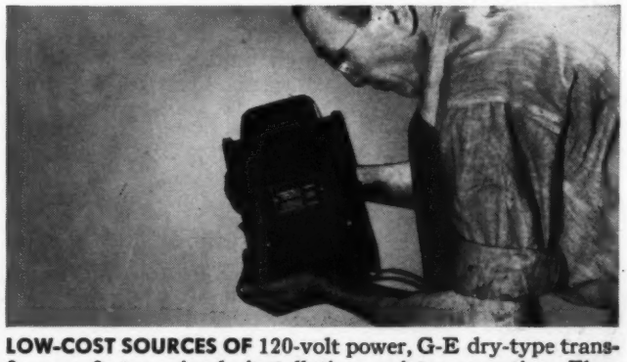
RELIABLY GUARDING system at entrance, G-E metal-clad switchgear is factory preassembled to save installation time. G-E magne-blast breakers are safer and easier to maintain.

KEYSTONE OF SYSTEM, General Electric unit substations dependably furnish power, close to load as possible, on well-protected circuits. They arrive at site in integral units

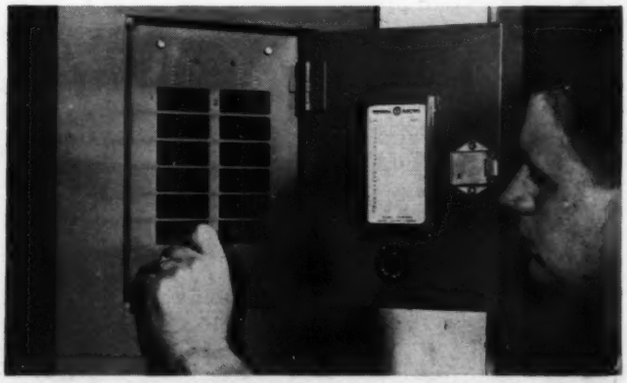
COMPACT G-E motor control centers place all control in easy reach and view of operator. Ready-to-install units are fully accessible to make connecting and servicing easier.

FASTER, LOWER-COST INSTALLATION is possible with risers and feeders of flexible G-E interlocked armor cable. Simple to install, it bends easily around obstructions, needs no conduit.

SAFER, SURER PROTECTION and control of 277-volt circuits result with General Electric panelboards. Designed to take less space, they provide ample room for easy wiring.



LOW-COST SOURCES OF 120-volt power, G-E dry-type transformers feature simple installation, quieter operation. They can be mounted almost anywhere, require little attention.



QUICK, EASY WIRING of G-E 120-volt panelboards is facilitated by roomy wiring gutters, all solderless connections. These 120-v circuits serve portable machines, appliances.

ready for quick installation. Compact and flexible, they fit into system wherever space is available, serve as "building blocks" for expansion.

LOW-VOLTAGE-DROP DISTRIBUTION is provided by risers and feeders of G-E Flex-A-Power* busway. It assures most efficient service on necessary long runs. Prefabricated sections and fittings provide easy, flexible installation.

POWER DISTRIBUTION

PRODUCTS

Standard G-E products, available from single source, ease system planning, application, purchasing

General Electric offers all the needed electric equipment for any power distribution system. Packaged purchasing of all distribution equipment from one supplier assures smoother integration and performance of system. Design, accounting, and clerical work is saved by the convenience and efficiency of dealing with only one central source of equipment.

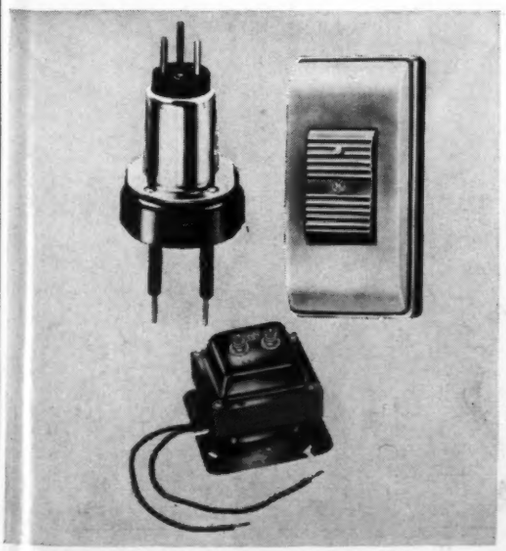
G.E. CO-ORDINATES EQUIPMENT DELIVERY with your construction schedules—no waiting for needed items nor storing of those shipped too early. Installation is speedier because factory assembling of major equipment groups saves valuable time at site.

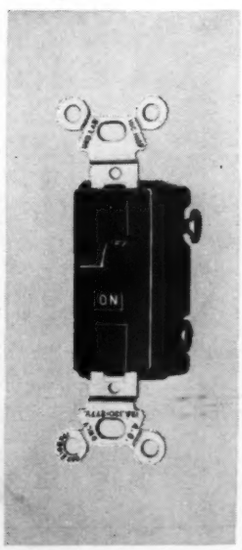
Uniform General Electric equipment fits easily together into a highly dependable, attractive system because units are naturally designed to look better and work better together. Mail coupon on last page of this ad for more details on packaged vs. piecemeal systems, or contact your nearest G-E Apparatus Sales Office.

*Reg. Trade-mark General Electric Co.

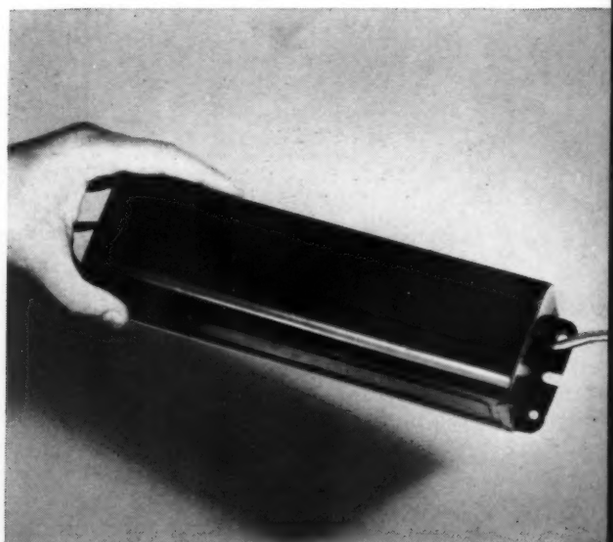
SEE ENGINEERING SERVICES AVAILABLE TO YOU WITH G-E EQUIPMENT ▶

GENERAL ELECTRIC





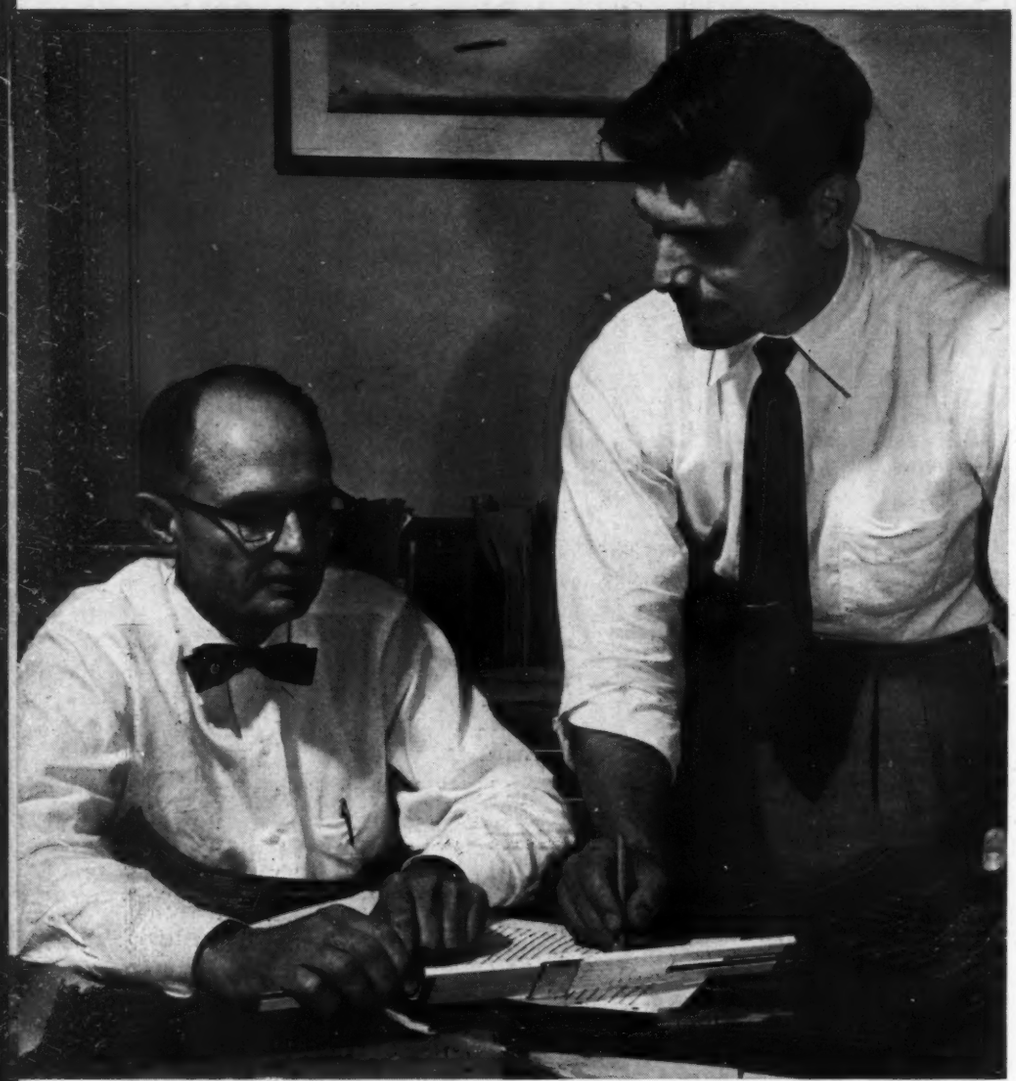
APPROVED SWITCHES for 277-v lighting include either new conventional snap switch (right) or remote-control switch (left), which uses small transformer to supply 24-v power to relay operating coils.



AVAILABLE AT NO EXTRA COST in larger lots of popular ratings, 265-v lamp ballasts serve lighting with longer, quieter operation, common to all G-E ballasts.

SIX G-E ENGINEERING SERVICES . . .

HELP PROTECT YOUR EQUIPMENT INVESTMENT



FROM PLANNING TO COMPLETION of building, General Electric engineers like Don Beeman (left) and Howard Kurt (right), both pioneers in development of 480Y/277-volt systems, help you select and apply the right electrical equipment for efficient operation.

1. G-E APPLICATION ENGINEERING helps architects and consulting engineers select and design the right electric system.

2. G-E ANALYTICAL ENGINEERING helps design the optimum electric system. Engineering experience, backed up by electronic system analyzers, save valuable design time.

3. G-E PRODUCT DEVELOPMENT laboratories design and test new equipment under tomorrow's conditions to meet future demands.

4. G-E FIELD-SERVICE ENGINEERING helps supervise installation, expedite start-up of major electric equipment.

5. G-E MAINTENANCE SERVICE from 32 G-E Service Shops will repair and uprate old equipment, help establish productive maintenance of equipment, furnish emergency service.

6. G-E PROJECT CO-ORDINATION means on-time engineering, shipment, installation of electric equipment from preliminary planning through start-up.

THESE SERVICES CAN WORK FOR YOU when you specify G-E equipment. Your G-E Apparatus Sales Representative can help you obtain any or all of them—contact him. For full story of the service available with G-E power distribution equipment, mail coupon below. General Electric Co., Section 680-1A, Schenectady 5, N. Y.

Progress Is Our Most Important Product

GENERAL ELECTRIC

MAIL TODAY for more information on modern power distribution systems

GENERAL ELECTRIC CO.
SECTION 680-1A, SCHENECTADY 5, N. Y.

Please send me:

☐ **your basic brochure, "Modern Power Distribution Planning Guide" (GEA-6344).**

☐ I am especially interested in power distribution for buildings within secondary network areas, so include "Modern Distribution Equipment for Commercial Buildings in Secondary Network Areas" (GEA-6223).

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Sterling HARDWARE

Quality you can put your finger on . . .

NEW 883 POCKET DOOR PULL

This new 3-in-1 Pocket Door Pull is another exclusive Sterling product. It takes the place of an edge pull and two flush pulls and requires only one simple cutout in door. It prevents pinched fingers by keeping door edge always accessible when door is in pocket. Available in all popular finishes. Be sure to use Sterling sliding door track, hangers and accessories wherever quality counts.

STERLING HARDWARE MANUFACTURING COMPANY
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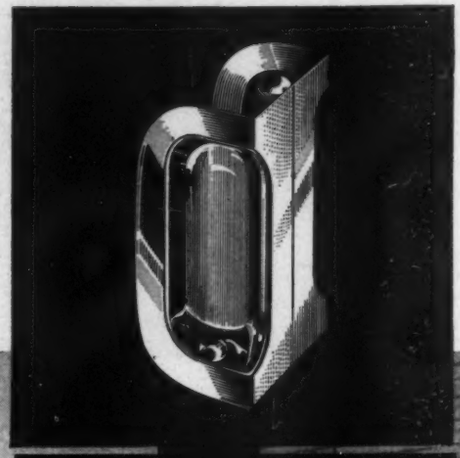


Pocket Door Lock
For bathroom and bedroom doors where privacy is desired. Simple installation with standard boring jig.

Pocket Door T-Frame
All steel T-Frame prevents warpage, makes pocket sturdier. Includes aluminum track, hangers and door guide.

CONSTRUCTION COST INDEXES

Labor and Materials — **U. S. average 1926–1929 = 100**

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

Period	Residential Brick	Residential Frame	Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Steel
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1946	181.8	182.4	177.2	179.0	174.8
1947	219.3	222.0	207.6	207.5	203.8
1948	250.1	251.6	239.4	242.2	235.6
1949	243.7	240.8	242.8	246.4	240.0
1950	256.2	254.5	249.5	251.5	248.0
1951	273.2	271.3	263.7	265.2	262.2
1952	278.2	274.8	271.9	274.9	271.8
1953	281.3	277.2	281.0	286.0	282.0
1954	285.0	278.2	293.0	300.6	295.4
May 1955	289.3	282.3	294.2	302.5	296.0
June 1955	290.6	283.7	295.3	303.6	297.0
July 1955	297.4	290.2	304.9	313.0	308.2
	% increase over 1939				
July 1955	140.8	137.1	133.3	134.6	136.9

ATLANTA

Period	Residential Brick	Residential Frame	Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Steel
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1946	148.1	149.2	136.8	136.4	135.1
1947	180.4	184.0	158.1	157.1	158.0
1948	199.2	202.5	178.8	178.8	178.8
1949	189.3	189.9	180.6	180.8	177.5
1950	194.3	196.2	185.4	183.7	185.0
1951	212.8	214.6	204.2	202.8	205.0
1952	218.8	221.0	212.8	210.1	214.3
1953	223.3	224.6	221.3	221.8	223.0
1954	219.6	219.1	223.5	225.2	225.4
May 1955	222.8	223.0	226.0	228.2	228.4
June 1955	224.3	224.9	227.2	229.2	229.6
July 1955	226.2	225.8	230.4	234.1	234.2
	% increase over 1939				
July 1955	162.1	171.7	142.3	140.3	147.3

ST. LOUIS

1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1946	167.1	167.4	159.1	161.1	158.1
1947	202.4	203.8	183.9	184.2	184.0
1948	227.9	231.2	207.7	210.0	208.1
1949	221.4	220.7	212.8	215.7	213.6
1950	232.8	230.7	221.9	225.3	222.8
1951	252.0	248.3	238.5	240.9	239.0
1952	259.1	253.2	249.7	255.0	249.6
1953	263.4	256.4	259.0	267.6	259.2
1954	266.6	260.2	263.7	273.3	266.2
May 1955	272.8	266.1	271.1	281.0	275.1
June 1955	274.0	267.4	272.2	281.8	276.0
July 1955	275.8	269.0	275.3	283.6	280.3
	% increase over 1939				
July 1955	150.3	151.4	131.9	136.7	135.5

SAN FRANCISCO

1930	90.8	86.8	100.4	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1946	159.7	157.5	157.9	159.3	160.0
1947	193.1	191.6	183.7	186.8	186.9
1948	218.9	216.6	208.3	214.7	211.1
1949	213.0	207.1	214.0	219.8	216.1
1950	227.0	223.1	222.4	224.5	222.6
1951	245.2	240.4	239.6	243.1	243.1
1952	250.2	245.0	245.6	248.7	249.6
1953	255.2	257.2	256.6	261.6	259.7
1954	257.4	249.2	264.1	272.5	267.2
May 1955	266.3	257.5	271.9	282.3	276.3
June 1955	270.2	261.9	275.8	286.1	278.8
July 1955	270.7	262.3	277.5	287.4	281.9
	% increase over 1939				
July 1955	156.3	164.1	136.4	135.8	142.0

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926–29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear regularly on this page.

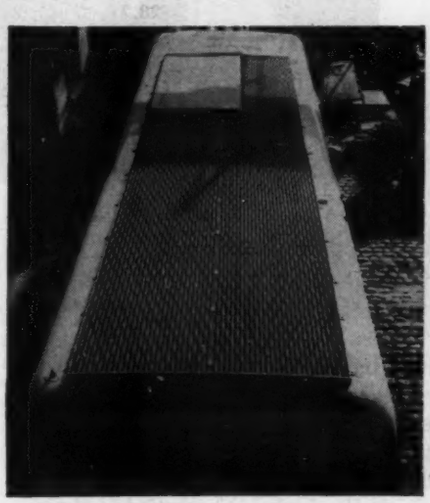
BORDEN *First* IN FLOOR GRATING

NEW USES OF GRATING . . . WHERE ONLY BORDEN QUALITY WOULD DO . . .

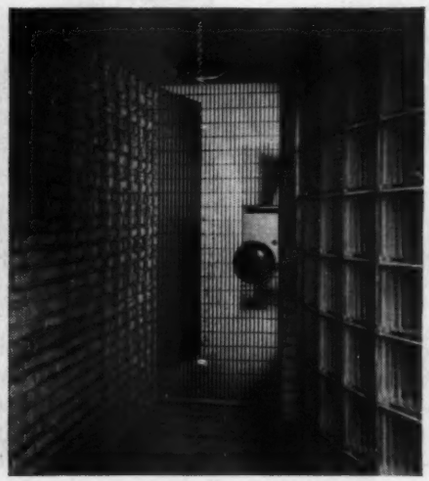
Here on this page are a few of the many new uses for grating being pioneered every day. Each is an exacting job where only standards of quality equal to BORDEN'S will do.

And remember . . . BORDEN manufactures every type grating in ferrous and non-ferrous metals.

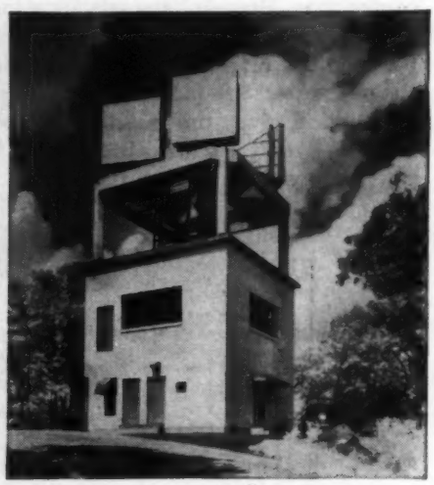
Functional beauty, low maintenance and child-proof fencing are a few of the advantages found in this *all aluminum*, pressure-locked grating.



Wherever this Color Television truck goes, whatever the assignment of the reporters who must mount its roof, BORDEN riveted *serra-crimp* grating will mean surerfooting —even in ice or snow.



Only the finest precision manufacturing would satisfy the architect who designed this door. BORDEN is recognized as a leader in quality, custom-manufactured gratings.



Television relay stations and radar stations that gird our continent have adopted grating as standard outside platform material. It will not collect snow as most other platforms will.

See our catalog in Sweet's

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All/Weld, Pressure Locked, and Riveted Floor
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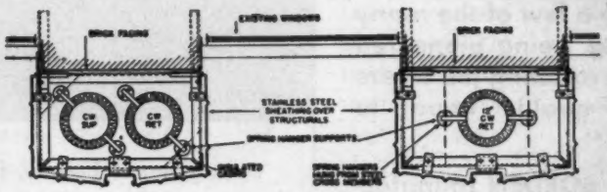
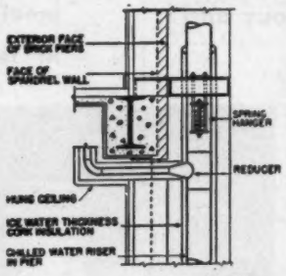
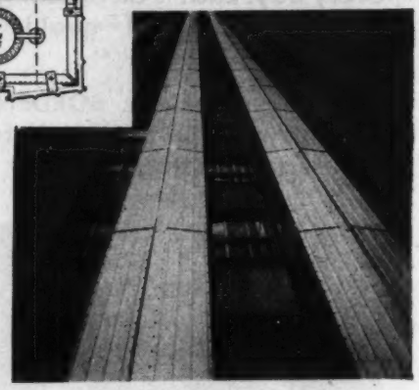
Solution... to air conditioning problems

Unique installation modernizes building façade ... avoids cutting through 25 floors

Up-to-date air conditioning service has been added to the Herald Square building in New York City without losing an inch of rentable floor space. Job was done by concealing supply and return chilled-water risers inside vertical, exterior stainless-steel enclosures fastened to the building's brick facing. Enclosures and risers are insulated. Spring hangers support the vertical risers, allow for thermal expansion or contraction. Branch lines servicing individual air conditioning units on each floor are hidden between the original 10-foot-high ceiling and the new furred 8-foot-high ceiling. This unique installation gives the building a modernized façade—avoids cutting through 25 floors to provide openings for the risers.

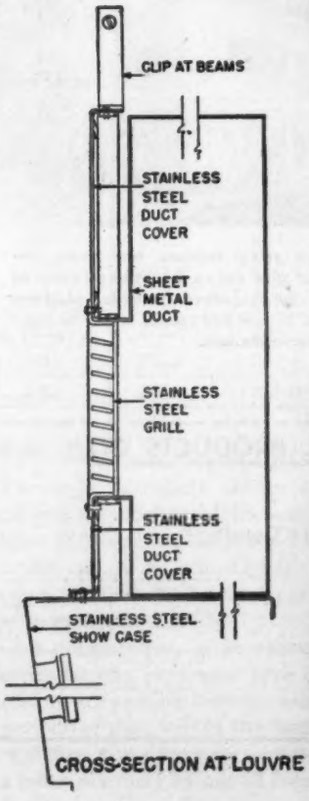






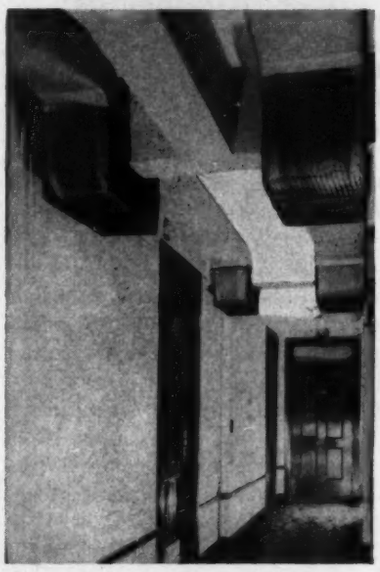
Decorative metal beautifies exposed air conditioning ducts

This modern installation in New York's Hotel Pierre is a striking example of how sheet-metal air conditioning ducts can be tastefully integrated with attractive surroundings. Clad in satin-smooth stainless steel, the display cases and the ducts over them merge into a dramatic setting for the luxuries exhibited behind the shop windows. In new or existing buildings—wherever exposed air conditioning ductwork presents a problem of interior decoration or design—decorative metals used in the ducts themselves or applied to their exposed surfaces can provide an attractive and practical solution.

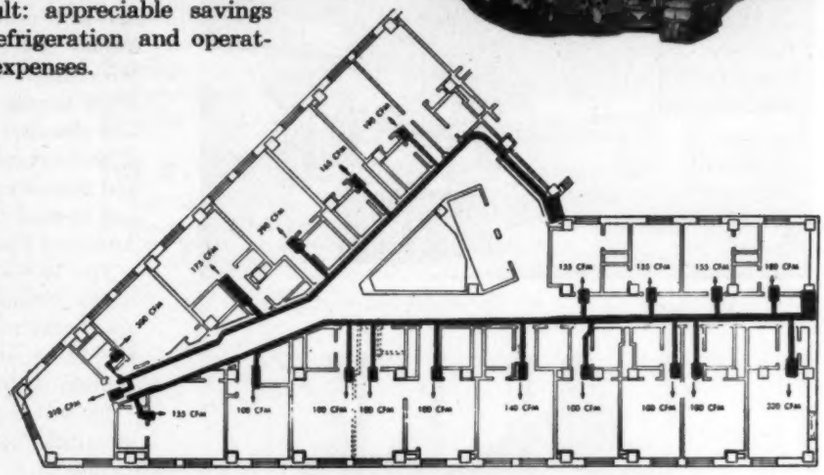


Two-zone system saves refrigeration capacity and operating costs . . . avoids sacrificing income-producing space

Most of the 400 guest rooms in the Sheraton-Lincoln Hotel in Indianapolis have been air conditioned with no sacrifice of income-producing space and little structural alteration, by means of a high-velocity, low-temperature system divided for two-zone operation on each floor. Roof-top fan rooms supply 58°F. air, at 4000 fpm, to two vertical outside risers which bypass the top-floor dining rooms to enter the building and continue down through unused ends of corridors, as shown in the typical floor plan. Ducts one-third normal size permit furring in corridor take-offs despite deep-beamed ceiling. Pressure- and velocity-reducing diffusers, designed for high acoustic absorption, supply room grills with low pressure, quiet air for draftless distribution. Result: appreciable savings in refrigeration and operating expenses.



Ducts' shallow depth permits running around deep beams in corridor ceiling. New ceiling with modern lighting completed the installation.



Typical floor plan shows simple and relatively short ductwork
Note main "risers" at end of one corridor and in elevator lobby.

The best plans call for "Freon"* refrigerants for any type and size of air conditioning installation

For both the most complex and the simplest air conditioning installation, the basic requirements the refrigerant must satisfy are the same. Every system needs a pure, dry, uniform refrigerant . . . one that will contribute to the long, trouble-free service life of the equipment. Thanks to Du Pont's near quarter century of experience in manufacturing "Freon" refrigerants, quality standards are unsurpassed.

It's equally important to specify a safe refrigerant, too. And "Freon" refrigerants are nonflammable, non-explosive, virtually nontoxic . . . meet building-code requirements everywhere. Protect your clients' interests by specifying "Freon" refrigerants in all air conditioning equipment you recommend.

SEND FOR INFORMATIVE FREE BOOKLET filled with practical data and suggestions to help solve a wide variety of basic installation problems. Read authoritative and specific discussions of air conditioning for homes, hotels, offices, restaurants, plants, laboratories, retail stores, shopping centers and many others. Write today for your free copy from E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division 1110, Room 11500, Nemours Bldg., Wilmington 98, Delaware.

KINETIC

FREON

SAFE REFRIGERANTS

*"Freon" is Du Pont's registered trade-mark for its fluorinated hydrocarbon refrigerants.

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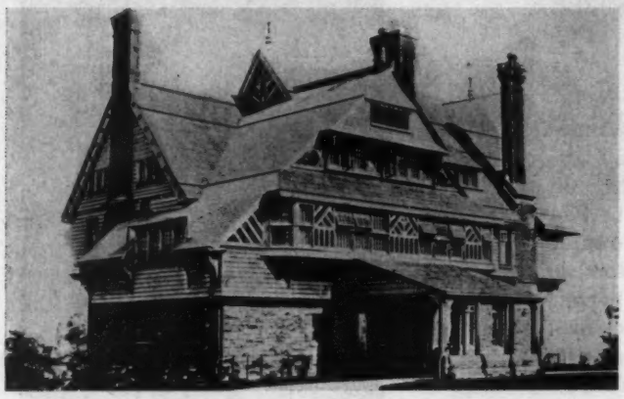
BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

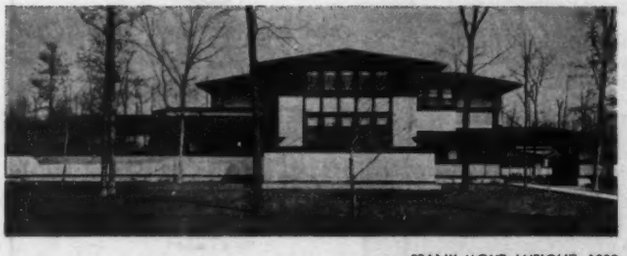
FROM RICHARDSON TO THE ORIGINS OF WRIGHT



H. H. RICHARDSON, 1874

MCKIM, MEAD AND WHITE, 1879–81

BRUCE PRICE, 1885



FRANK LLOYD WRIGHT, 1902

The Shingle Style: Architectural Theory and Design from Richardson to the Origins of Wright. **By Vincent J. Scully, Jr. Yale University Press (New Haven, Conn.) 1955. 181 pp, illus. $6.50.**

AMERICA, like Japan, Switzerland, Northern Italy and the Scandinavian countries, to name a few, is a timber country. Yet, although American houses from the first have been designed and built of wood as copied from English architectural books, it wasn't until the middle of the 19th century that the United States can be considered to have produced a uniquely American expression of timber form.

In the 1840's, when the widespread Greek revival in the United States bore the brunt of ridicule and abuse from the critics — among them Andrew Jackson Downing, American domestic architecture in wood began to take on structural expression, picturesque massing and free form invention. The architects of this "stick style," well versed in the suburban picturesque movement which had been going on in England since the mid-18th century, were also concerned with American conditions and people. "Democratic, agrarian, utilitarian and preoccupied with American framing techniques, the builders of the stick style broke with the grand styles of the past and absorbed influences from the comparable wooden styles of Switzerland and Japan. Most of all, they brought the long and complex development of Renaissance design to a close and opened the field to new invention along 19th century American lines," according to Mr. Scully.

The 1870's brought still greater changes to American domestic architecture. In this decade the architect rose from anonymity to professional stature. And from among this professional group one personality stands out as leader — Henry Hobson Richardson. It was Richardson who introduced the "Queen Anne" planning, being developed in England at the same time by Richard Norman Shaw, to American domestic architecture. This plan created a new kind of open interior space based on the concept of the living hall.

The Centennial Exposition at Philadelphia, May through November, 1876, brought Queen Anne architecture to the limelight. Evocations of the past were dominant themes of this exposition — the Queen Anne style was reinforced by Japanese and especially Colonial art and architecture of 100 to 200 years before.

From this time on the antiquarianism and academic Colonial architecture was united with a free and creative Queen Anne style to form an intellectual and aesthetic basis for a new domestic architecture, which has reached a culmination in the work of Frank Lloyd Wright. Of its influence on Wright the author says, "Not all of Wright's work can be explained by the domestic architectural tradition of the later 19th century, nor can it be understood solely through a discussion of his uses of it. Nevertheless, the tradition fused in him, and through him it formed one of the bases for the modern architecture of the 20th century. One must conclude that in Wright's work the creative traditions of the 19th century still live and have given rise to the new."

The primary objective of Mr. Scully's work, which was presented in somewhat longer form as a dissertation for the degree of Doctor of Philosophy at Yale, is to illuminate the

(Continued on page 66)

Rolling Steel Doors

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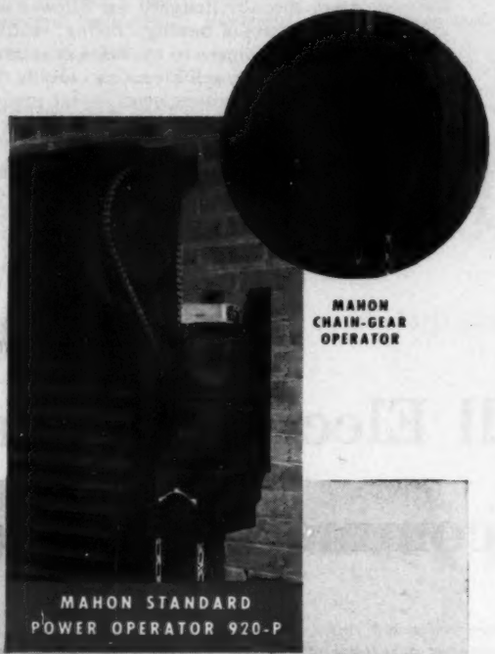

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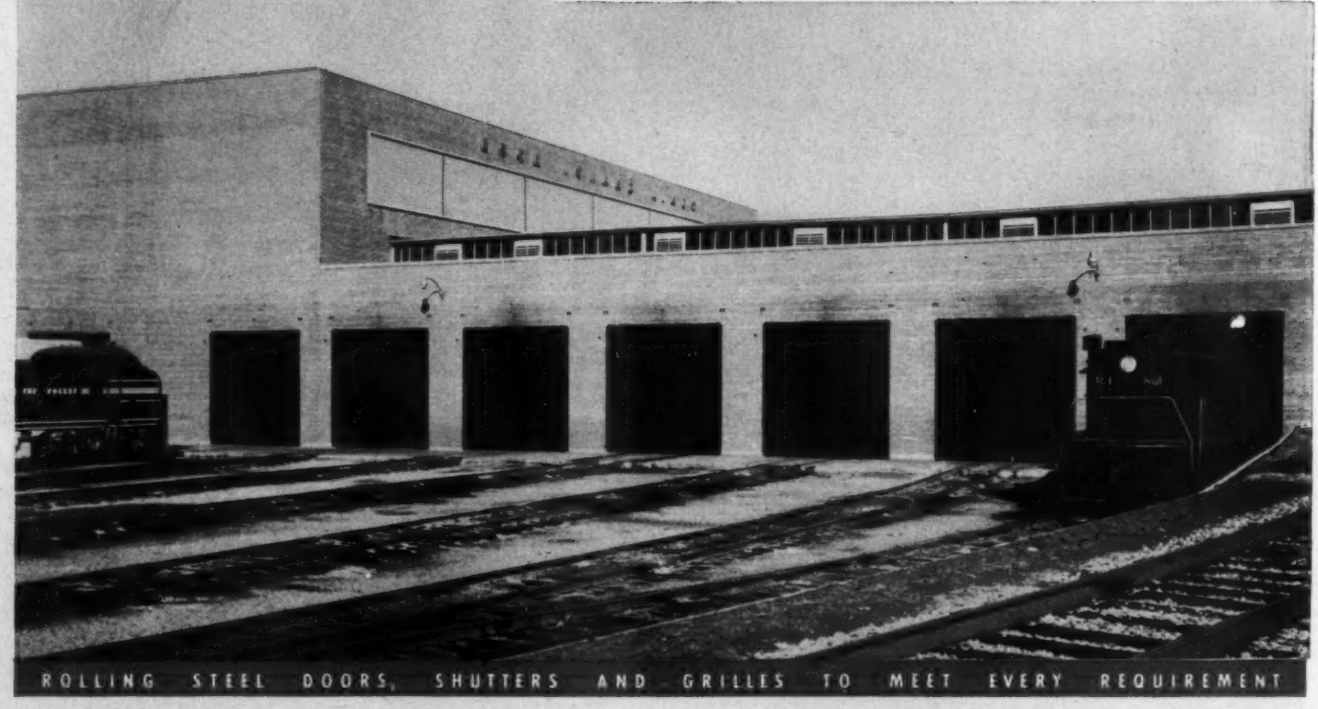

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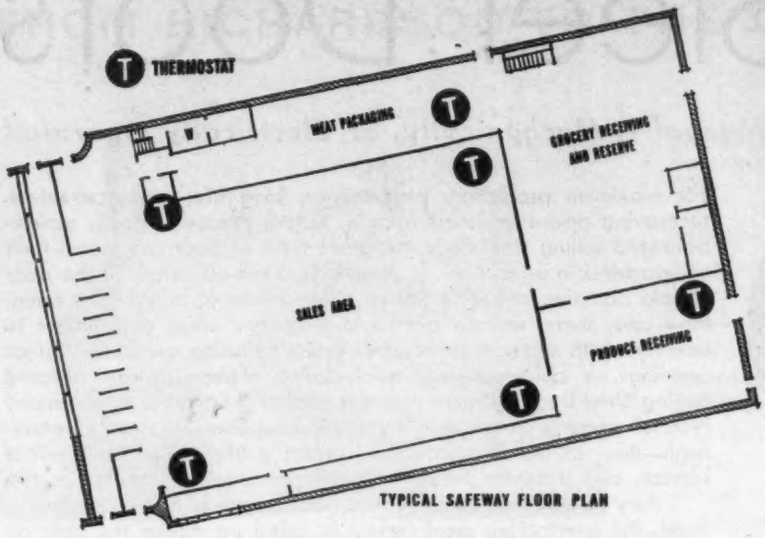
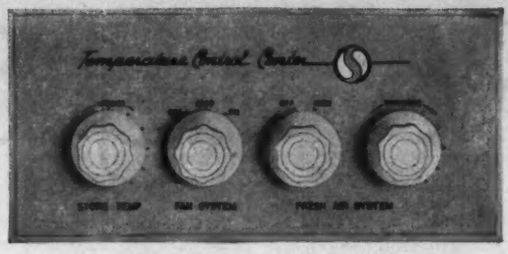
MAHON

New Safeway stores get most advanced comfort control system available



TYPICAL SAFEWAY FLOOR PLAN



Electronic panel, specially designed for Safeway stores, gives complete control of heating, cooling, ventilating and humidifying equipment to the Safeway store manager. In addition, Honeywell Electronics ideally meets basic Safeway control requirements — year-round air conditioning in main shopping areas, cooling *and* humidity control in produce storage rooms. Only electronics could supply other advantages wanted by Safeway management, listed opposite. Typical Honeywell installations are in eight new Safeway stores on the west coast.

Honeywell Electronics makes commercial building

Safeway Food Store, Walnut Creek, Calif. Architect: Arthur A. Iwata, Berkeley. Consulting mechanical engineer: Maurice R. Archer, Oakland. Electrical engineer: Ray Williamson, Oakland. General contractor: MacDonald, Young & Nelson, San Francisco. Mechanical contractor: Atlas Heating & Ventilating Co., San Francisco.

Major advantages of Honeywell Electronic Customized Temperature Control

Central Control. Special Honeywell panel provides a compact supervisory control center. Adjustments are made *at the panel.* Panel access may be free, or restricted to building manager or one trained employee to prevent tampering. *Electronics makes central control economically feasible.*

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any modern

easier to plan, more profitable to operate

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HONEYWELL ELECTRONICS is the latest development in temperature control. It's big news, *important* news, for you and your clients. The case of eight new Safeway food stores in California and Washington shows why.

In meeting control needs peculiar to today's supermarkets, Safeway's planners wanted all the basic advantages of a good control installation, and more. They wanted refinements as modern as their stores—refinements that promised long-range efficiency and safety from obsolescence for many years ahead. Wisely, they chose Honeywell Electronic Customized Temperature Control. Features of the installations and how they function for Safeway stores, are briefly described above.

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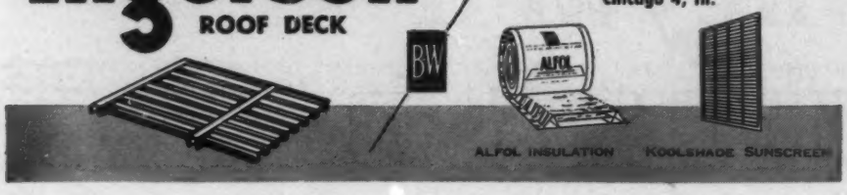

REQUIRED READING

(Continued from page 62)

main course of theory and design which developed by the late 19th century into a unique American achievement.

This he has done, with thoroughness, scholarliness and interest. As with his lectures, the reader dare not flicker an eye, for the pace is fast and rich. He presents the published plans, the written statements of the architects and contemporary criticisms of the buildings to analyse this development. The text is well illustrated with photographs and drawings and well fortified with interesting footnotes and a bibliography.

The secondary objective of the author's was to present some works of little known but important American architects of this period. Architecture by Robert Swain Peabody, William Ralph Emerson, John Calvin Stevens, Bruce Price, Arthur Little, Wilson Eyre and the firm of McKim, Mead and White is brought to light.

This is not, however, a book that merely lists architects, buildings and dates. The facts and illustrations of the "shingle style" development present this generation's search for expression and for order in American architecture, based on a typical clinging to a usable past and involved with momentary transcendance of types. The author sums it up, "The history of the shingle style, therefore, reveals certain characteristics of rupture, discontinuity and reaction at a significant moment in American culture. It also asserts continuity and the ability to sustain experiment as well. Most of all, the shingle style itself — in its earnest mixture of motives, its quickly fired vitality and its impatient search for the roots of experience in a newly industrialized world — seems a most poignantly 19th century American phenomenon. It can serve as a useful memory to us all."

The problems that faced the late 19th century still stand — and in the problem of the modern world's search for itself one wonders what the architectural solution will be. While the battle between the Wrightian and Miesian camps develops further, new materials and new techniques are stirring the imaginations of others.

When the materials are all prepared and ready, the architects shall appear.
I swear to you the architects shall appear without fail,

(Continued on page 410)

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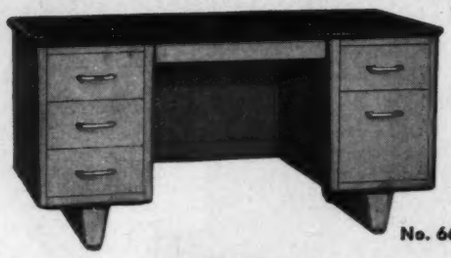

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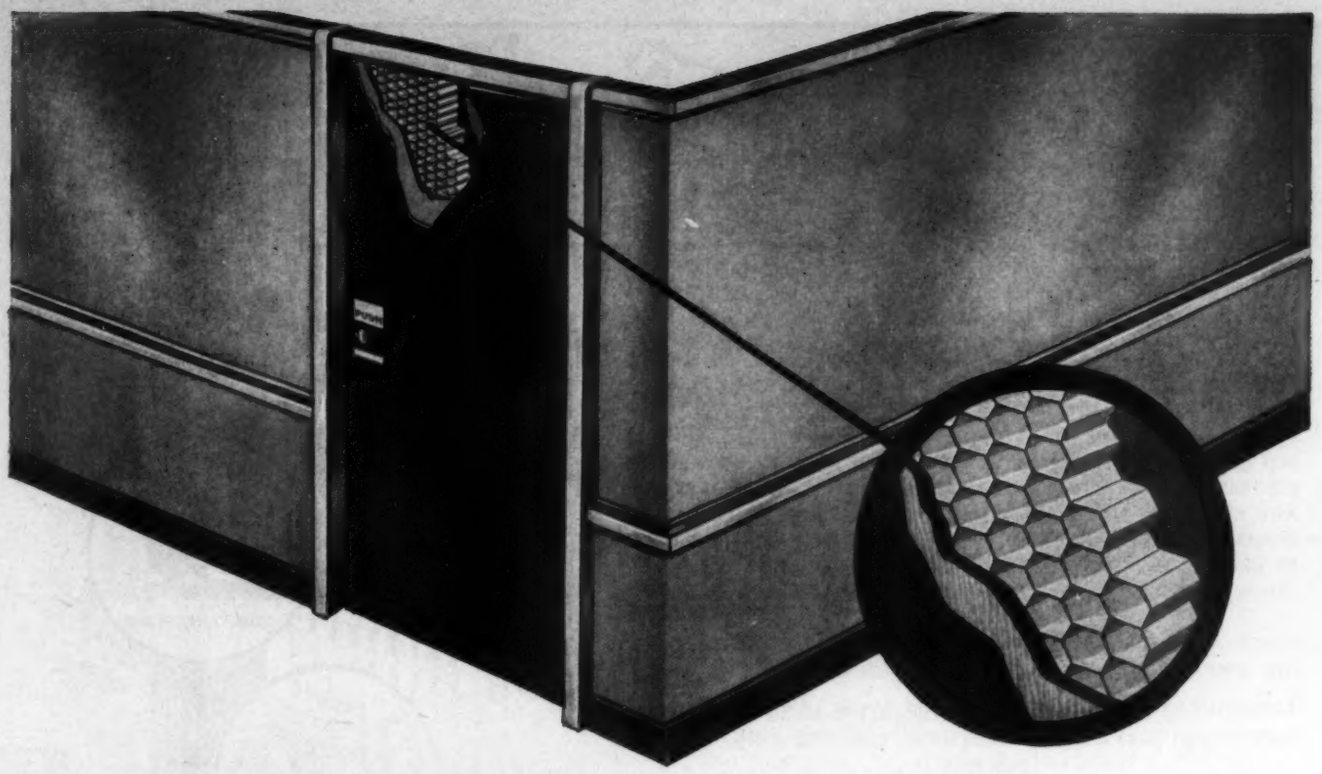

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†Patent applied for

*Kawneer Company, Architectural Products Division, Niles, Michigan

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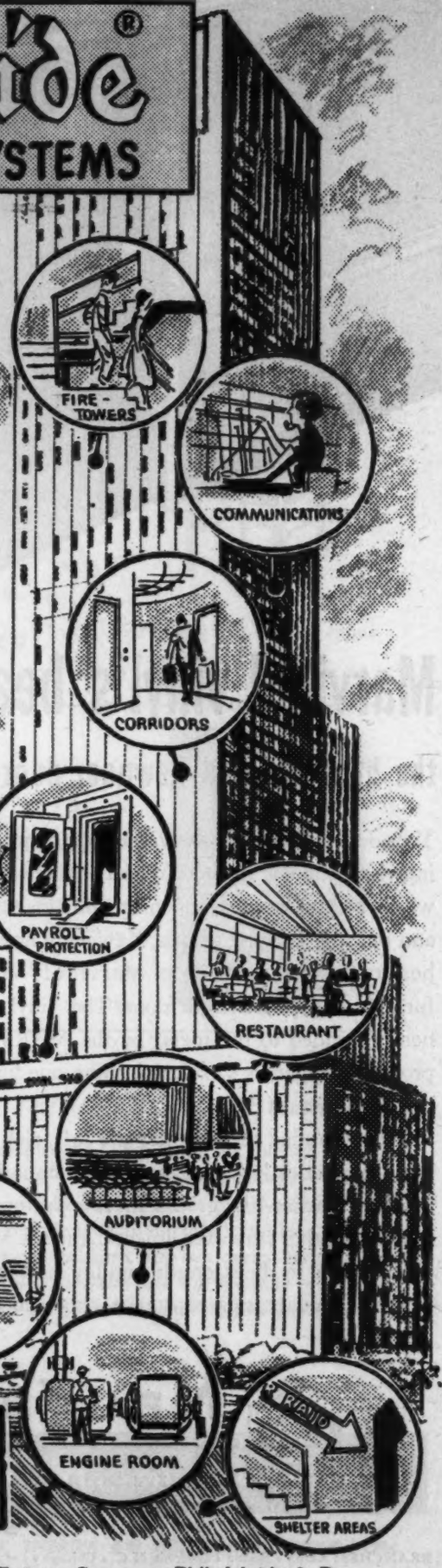
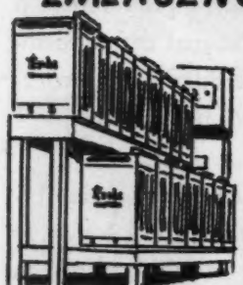


EXIDE PROVIDES 2 WAYS FOR POSITIVE EMERGENCY LIGHTING PROTECTION



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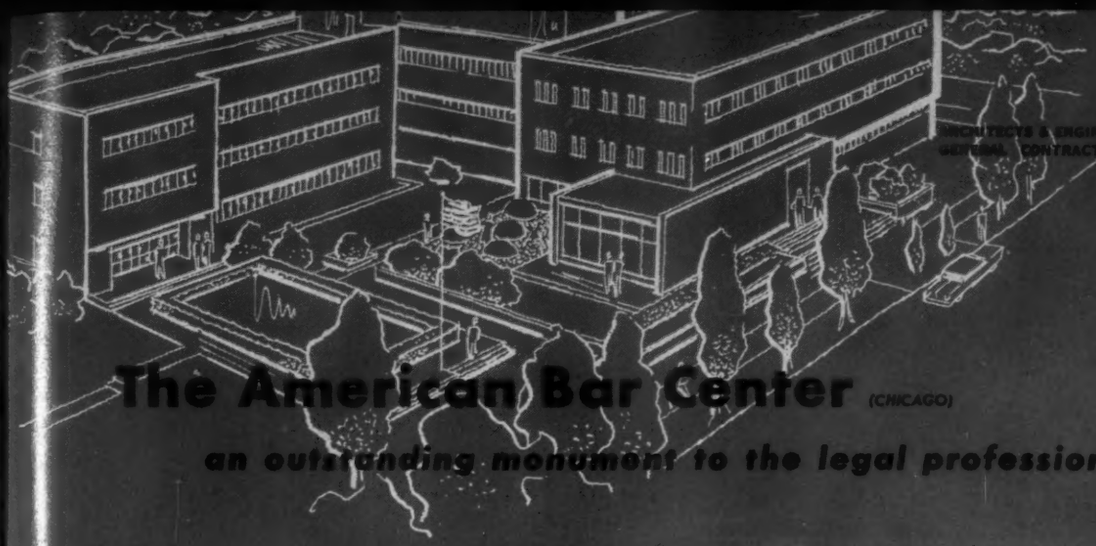

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BELOW: *Among the many features of the lobby are the clerestory illumination, the unobtrusive air diffusers, and the bas relief mural carved in wood by Buck Winn, Jr.*

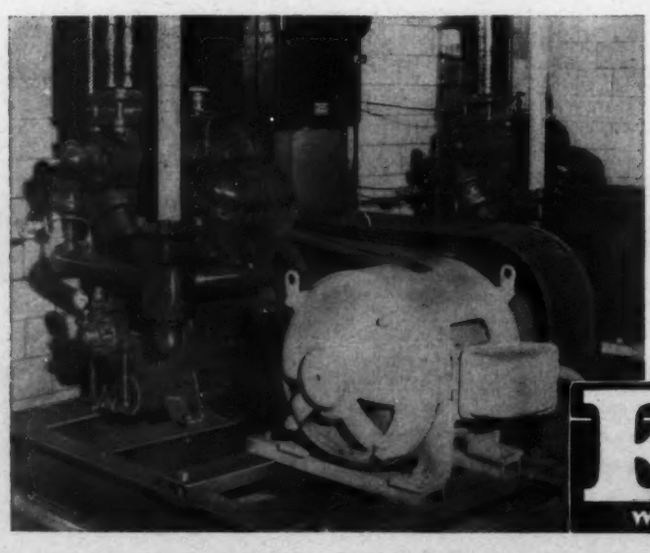
Architects: Prinz and Brooks
General Contractor: Burgher Construction Co.

The New Look In

• Architecture
• Air Conditioning

The Oak Cliff Savings and Loan Association started eight years ago with $35,000—now has resources of $30,000,000. Its new building at Bishop and Center Streets is one of the finest in Dallas, and was awarded first honors for non-residential construction in 1954 by the Texas Society of Architects.

The entire structure, including the lobby, conference and accounting areas, community room and lounge, is air conditioned with two Frick "ECLIPSE" compressors. Each refrigerating machine is driven by a motor of 40 horsepower.



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September 15, 1955

SUBJECT: Special Report to Industry

It is generally recognized by engineers and corrosion experts that there is far more to stopping rust on a rusted surface, than just applying any type of material at a certain film thickness. Dry film thickness of a protective coating is important--but, it's what goes on UNDER the film surface that counts, too. The vehicle of the coating that's applied over rust must penetrate to bare metal, driving out the air and moisture that, in presence of metal, cause rust.

Rust-Oleum users, for over thirty years, have known that Rust-Oleum does exactly that through practical use and results of the application of the product. However, Rust-Oleum wanted to go even further in bringing you irrefutable proof of this penetration.

With this in mind, the Rust-Oleum Corporation consulted with technologists from the Battelle Memorial Institute in Columbus, Ohio, who conducted this important research project, utilizing radioactive tracing technique with C14 radioisotope to measure Rust-Oleum penetration. Now, after nearly three years of continued research, you can actually look UNDER the surface film and see how the Rust-Oleum specially-processed fish oil vehicle penetrates rust to bare metal.

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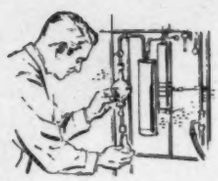
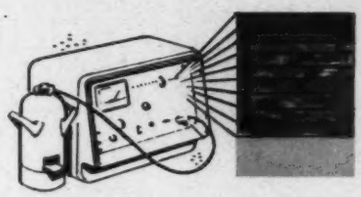
The methods and results, on which the technical information on these pages is largely based, are presented in a complete thirty page report entitled, "The Development of a Method to Determine The Degree of Penetration of a Rust-Oleum Fish-Oil-Based Coating Into Rust Coatings on Steel Specimens," prepared by Battelle Memorial Institute technologists. Request your copy on your business letterhead without cost or obligation.



1 To trace Rust-Oleum penetration through rust, the Rust-Oleum fish oil vehicle was made radioactive with C^{14} radioisotope. The radioactive Rust-Oleum fish oil vehicle was then formulated into Rust-Oleum 769 Damp-Proof Red Primer without changing Rust-Oleum's exclusive formulation or performance of product.

2 Rusted metal test panels were scraped and wirebrushed to remove rust scale and loose rust, according to Rust-Oleum's standard directions for application. The radioactive Rust-Oleum 769 Damp-Proof Red Primer was then brushed on directly over the remaining rust on these rusted test panels and allowed to dry.



3 Then—the surfaces of the rusted panels were shaved at approximate half-mil levels and Geiger Counter readings of Rust-Oleum penetration (radioactivity) were taken at each level down to bare metal. These measurements are shown as "Percentage of Surface Radioactivity" figures on the graph on the opposite page.

Dry film thickness of a coating is important, but, what goes on UNDER the film surface is vitally important, too, in the stopping of rust. Rust-Oleum Stops Rust, because it penetrates the rust to bare metal. The Rust-Oleum fish oil vehicle works around the rust particles and through the fissures and crevices in the rust formation to the bare metal. It doesn't "bridge-over" the tiny, microscopic pits in the metal—BUT, actually goes into these pits to drive out air and moisture and coat the metal with a penetrating, low-surface-tension film that expands and contracts with the metal. Because of this unusual penetration, you can apply Rust-Oleum 769 Damp-Proof Red Primer directly over the rusted surface after scraping and wirebrushing to remove rust scale and loose rust. Thus—you save time, labor, and money as costly surface preparations are usually eliminated.

From tanks, girders, machinery, roofs, sash, stacks, pipes, wire fences, and building maintenance in industry . . . marine, farm, or railroad applications . . . to gutters, metal sash, lawn furniture, etc. around the home . . . Rust-Oleum is the modern way to Stop Rust and beautify as you protect, in your choice of Red, White, Black, Aluminum, Gray, Green, Yellow, Blue, etc. May be applied by brush or spray and dries to a firm, *decorative* coating that resists salt water, salt air, heat, fumes, sun, humidity, and weathering. Industrial users see Sweets for complete catalog and nearest Rust-Oleum Distributor, or attach coupon on the opposite page to your business letterhead for complete information, including your thirty-page report on Rust-Oleum penetration. Homeowners will find Rust-Oleum featured at leading Hardware, Paint, and Lumber dealers in most localities.

there is only one Rust-Oleum . . . *it is distinctive as your own fingerprint*

RUST-OLEUM®

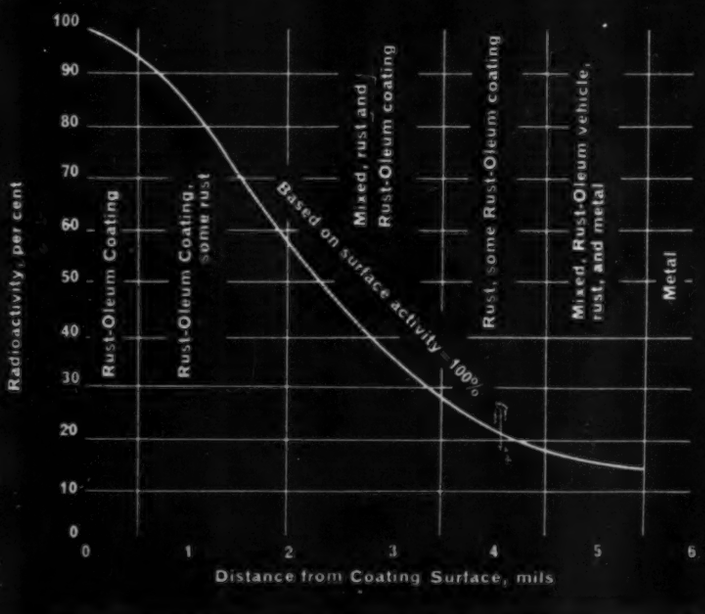
Rust-Oleum is exclusive. It incorporates a specially-processed fish oil vehicle that penetrates through rust to bare metal. It dries right and is free of objectionable odor. Many attractive colors.

STOPS RUST!

A new Rust-Oleum development is the Rust-Oleum Galvinoleum coating. It sticks to new or old galvanized surfaces *without* etching, *without* weathering. Available in red, gray, green, metallic.

Actual unretouched photomicrograph (enlarged 250 times) showing cross-section of rusted metal coated with Rust-Oleum. Geiger Counter readings were taken at each half-mil level down through the rust — tracing Rust-Oleum penetration through rust to bare metal.

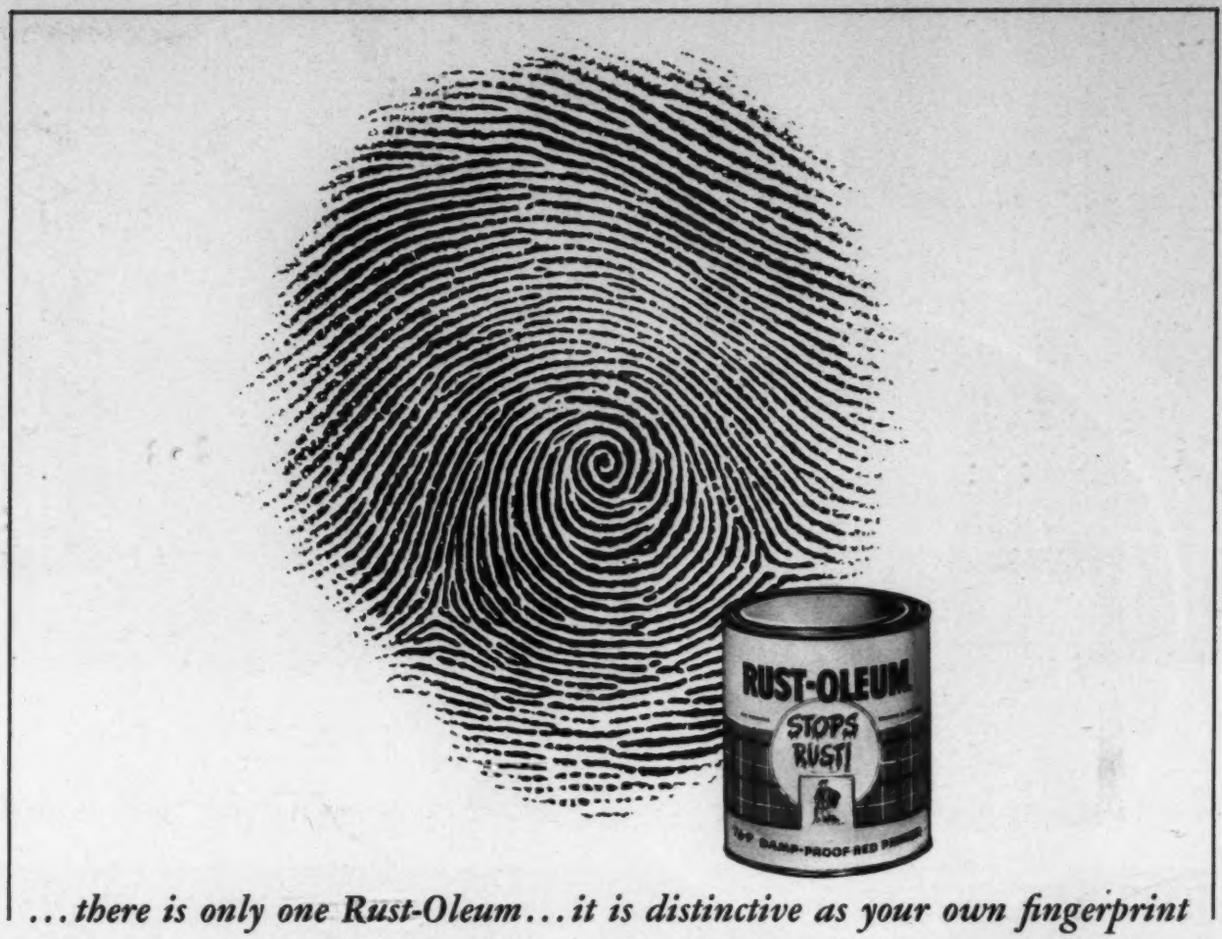
Graph (at right) shows Geiger Counter recordings of Rust-Oleum penetration. Visible evidence of Rust-Oleum penetration as recorded by Geiger Counter and Gas Flow Proportional Counter is shown on graph. Rust-Oleum penetration is expressed in terms of "Percentage of Surface Radioactivity" figures at given mil levels. Note how Rust-Oleum pigment and fish oil vehicle combined penetrate to approximately four mils—then the fish oil vehicle penetrates through remaining rust to bare metal.



GET THE COMPLETE STORY. ATTACH TO YOUR BUSINESS LETTERHEAD FOR YOUR COPY OF THIS THIRTY-PAGE REPORT WITHOUT COST OR OBLIGATION.

Rust-Oleum Corporation
2900 Oakton Street, Evanston, Illinois

- ☐ Please send me without cost or obligation, the Rust-Oleum thirty-page report entitled, "The Development of a Method To Determine The Degree of Penetration of a Rust-Oleum Fish-Oil-Based Coating Into Rust Coatings On Steel Specimens," as prepared by Battelle Memorial Institute technologists.
- ☐ Complete literature and color charts.
- ☐ Nearest source of supply.



...there is only one Rust-Oleum...it is distinctive as your own fingerprint

RUST-OLEUM IS EXCLUSIVE. Most manufacturers of protective materials specify that rusted metal surfaces must be free of rust before applying their product. Rust-Oleum does NOT! With Rust-Oleum you simply scrape and wirebrush to remove rust scale and loose rust —then brush Rust-Oleum 769 Damp-Proof Red Primer directly over the remaining rust. The specially-processed fish oil vehicle penetrates rust to bare metal, merging the rust particles into the coating. It dries to a firm, decorative coating that resists salt water, salt air, heat, fumes, humidity, sun, moisture, and weathering. This unusual penetration saves you time, labor, money, and metal because sandblasting, chemical pre-cleaning, and other costly surface preparations are usually eliminated.

AVAILABLE IN *MANY COLORS.* You beautify as you protect because Rust-Oleum is available in many, many attractive colors including Aluminum, White, Black, Green, Red, Gray, Orange, Yellow, Blue, etc. In addition to industrial rust preventive coatings, Rust-Oleum finish coatings, incorporating the same specially-processed fish oil vehicle, are available (1) to match original equipment manufacturer's colors for farm and road and highway construction equipment, (2) Oil Field finishes to match original equipment colors for rigs, pumps, etc., (3) Restful Colors for plant and institutional interiors, (4) Special Marine and Railroad finishes, (5) Heat Resistant and Chemical Resistant finishes, (6) Masonry and Floor Coatings.

RUST-OLEUM®

STOPS RUST!

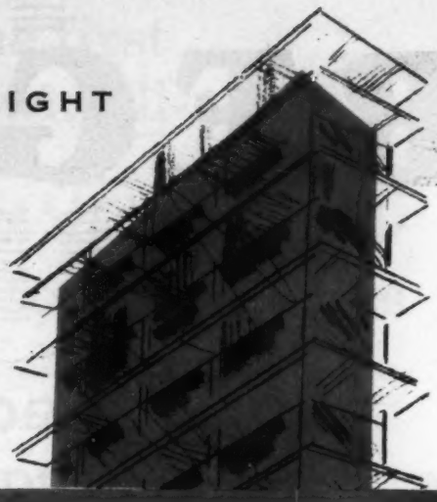
Remember—Rust-Oleum's unusual rust-resistant qualities enable you to apply Rust-Oleum 769 Damp-Proof Red Primer one season—and wait until the following season to use your Rust-Oleum finish coating. Thus—you "stretch" maintenance budgets season-to-season.

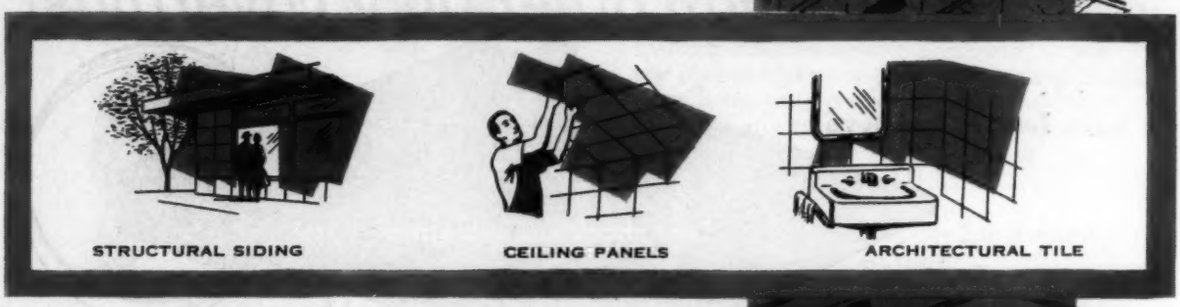
Write on your business letterhead for your copy of the special Rust-Oleum thirty-page report, entitled, "The Development of a Method to Determine The Degree of Penetration of a Rust-Oleum Fish-Oil-Based Coating Into Rust Coatings on Steel Specimens." We'll be glad to send it to you promptly, and there is no cost or obligation.

Rust-Oleum Corporation • 2980 Oakton Street • Evanston, Illinois

FOR DURABLE COLOR IN LIGHTWEIGHT MODERN DESIGN...

SPECIFY PORCELAIN ENAMELED ALUMINUM





Du Pont Porcelain Enamel for aluminum provides a wide range of durable, appealing color for the execution of today's most imaginative designs.

This weather- and corrosion-resistant new finish is available in virtually any color and degree of surface gloss. It's lightfast, and resists abrasion, thermal shock, impact and flexing. Porcelain enameled aluminum eliminates prefabricating costs, too. Sheets of enameled aluminum can be drilled, sawed, sheared and punched on the job without exposure of the metal or progressive spalling.

For new structural and decorative applications of porcelain enameled aluminum, consult Du Pont. We'll gladly put you in touch with experienced enamelers for performance specifications. Just mail the coupon for details.

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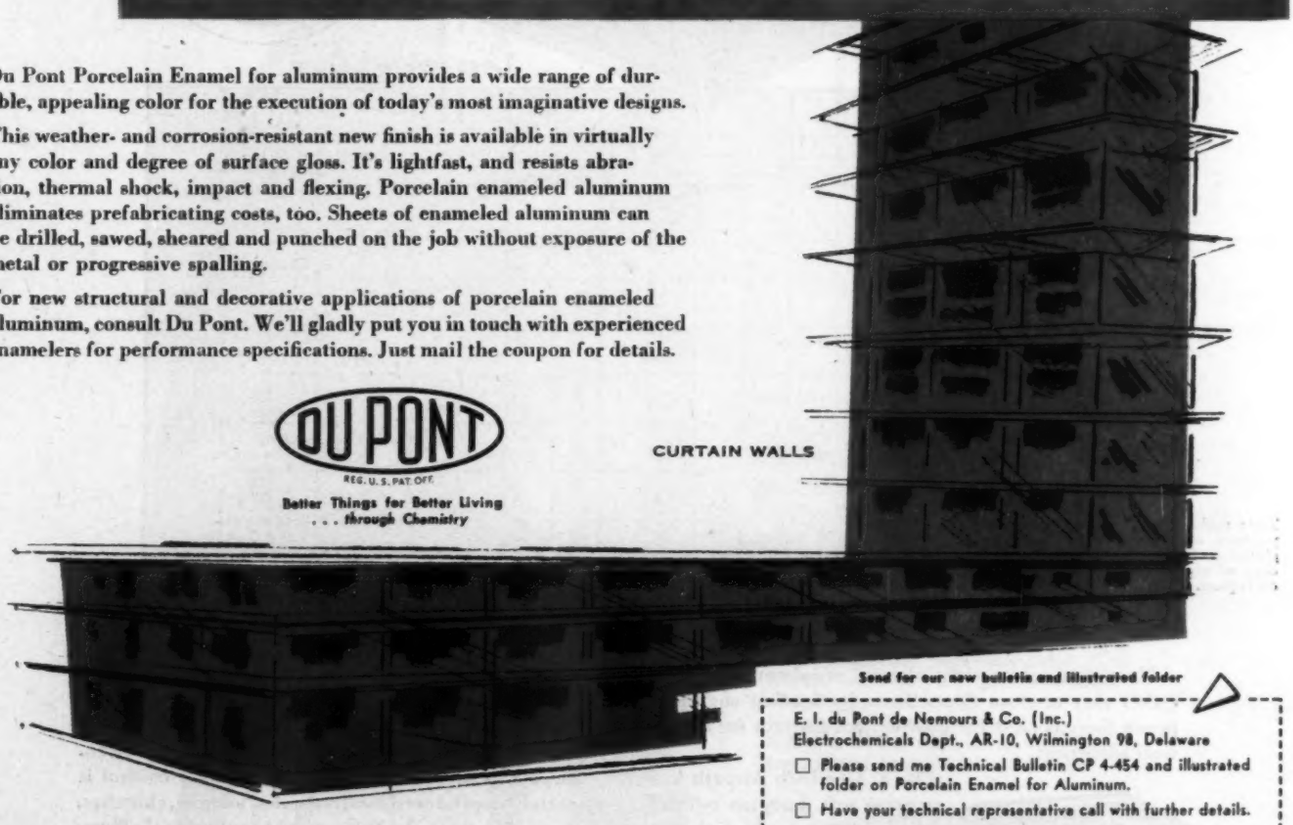
Better Things for Better Living
. . . through Chemistry



Send for our new bulletin and illustrated folder

E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Dept., AR-10, Wilmington 98, Delaware

☐ Please send me Technical Bulletin CP 4-454 and illustrated folder on Porcelain Enamel for Aluminum.

☐ Have your technical representative call with further details.

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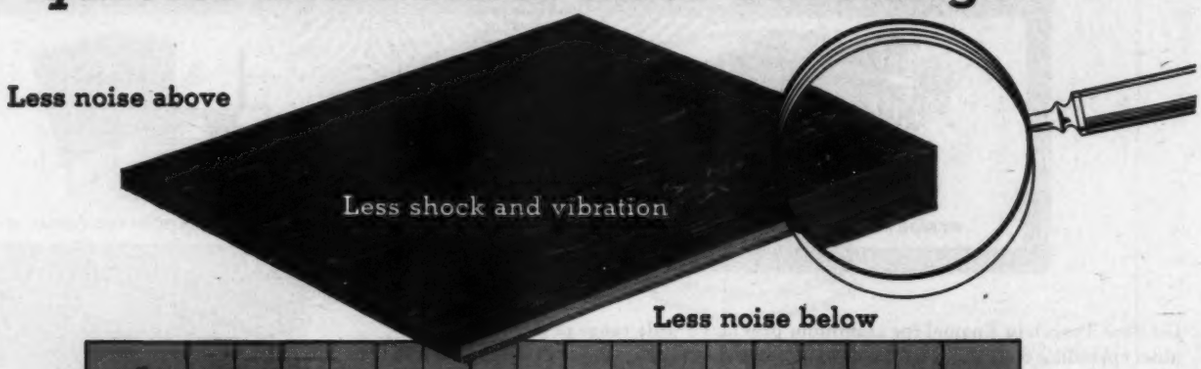
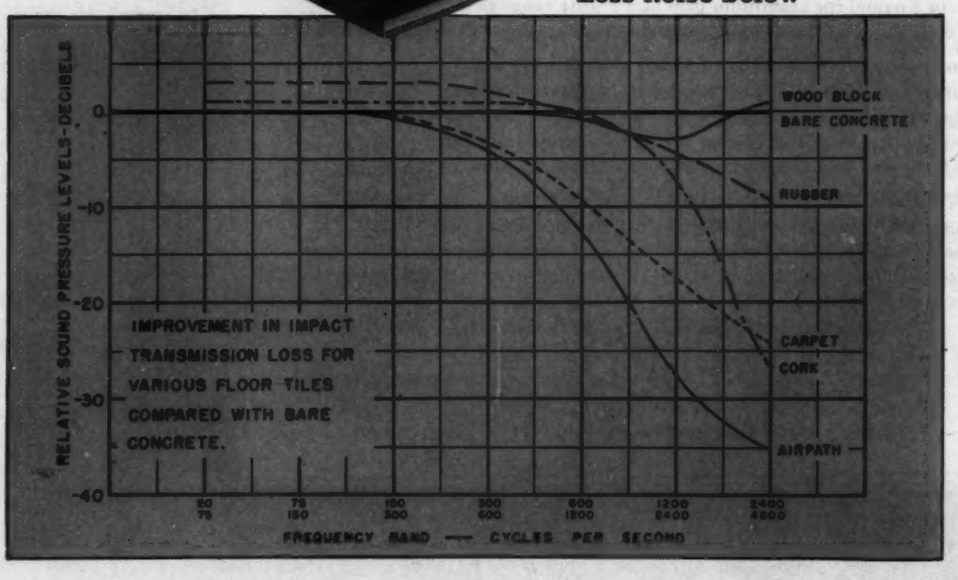
Du Pont PORCELAIN ENAMEL for aluminum

NEW B.F.Goodrich AIRPATH

Cushioned Rubber Floor Tile

quieter than other floor coverings!





Tests made by an independent acoustical engineering laboratory — copy of report available on request.

Now you can satisfy clients' requirements for a quiet, easy-to-clean floor. Tests by leading engineers prove there is no other flooring like Airpath for acoustical efficiency.

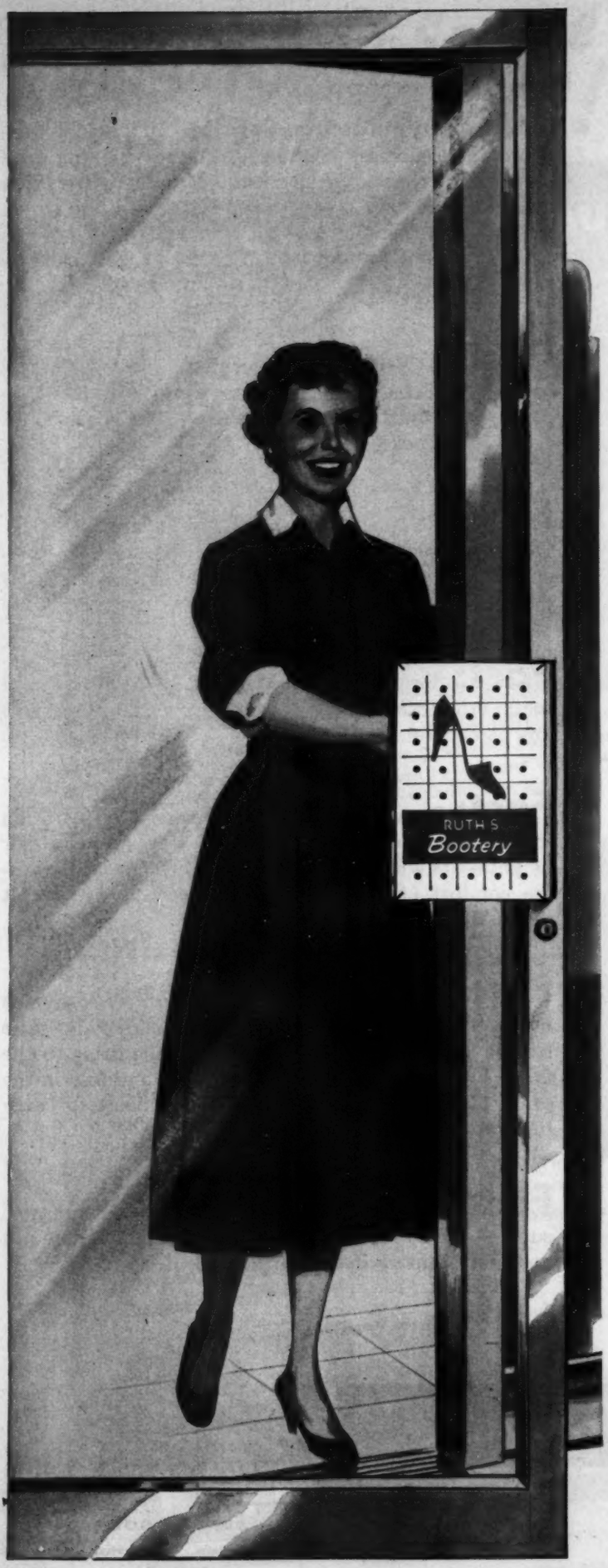
B. F. Goodrich Airpath has an extra soft, buoyant cellular rubber cushion backing that is *naturally resilient.* It cushions footsteps . . . deadens their sound in both the area being used and the area below . . . absorbs shock and vibration.

B. F. Goodrich Airpath has *Super-Density*, too — the exclusive feature that eliminates dirt-catching surface pores, makes floors easy to clean and keep clean.

Airpath is ideal for all areas where noise control is essential: hospital corridors, nurseries, lounges, churches, theaters, libraries, and business and professional offices. Available in 10 attractive, marbleized colors. Write: ***B. F. Goodrich Co., Flooring Division, Dept. AR10 Watertown 72, Massachusetts.***

B.F.Goodrich FLOORING PRODUCTS

RUBBER TILE • ASPHALT TILE • KOROSEAL TILE • RUBBER COVE BASE • ACCESSORIES



The first new...all-new "Custom" door at standard prices

An outstanding example of the "Kawneer Touch" . . . the new all-welded aluminum door can be "customized" to your needs. Now you can specify a door that is 10% stronger than similar doors, provides a clean, seamless, eye-appealing appearance, and features interchangeable hardware . . . yet the cost compares with other standard doors. Here is the only stock door that can be styled to any type of store. Learn all about it now. See your Kawneer dealer or write Kawneer, Niles, Michigan.

Now! —identification hardware "individually designed"

Style "M": Cosmopolitan hardware for *double-acting* doors.

Style "B": Coronet "Pull Handle" ideal for symbol.

Style "B": Coronet "Push Bar" provides length for full name.

Kawneer offers a choice of four different styles of hardware. The two styles shown have interchangeable face plates. If you wish a face plate to identify any type of business or name, all you do is have artwork prepared. Kawneer will laminate it in plastic, etch it on aluminum, or produce it on any material you desire and in any color. The cross-hatch plate is then merely replaced right on the job with the new design.

Completely welded construction for greater strength—lower cost

- 10% stronger than most doors
- New "deep-weld" penetrates metal 100%
- Hairline joints and unblemished finish for attractive appearance
- No exposed, unsightly screws
- Seamless tubular frame construction
- Long lasting beautiful alumilite finish

Kawneer
General Offices
NILES, MICHIGAN
ARCHITECTURAL PRODUCTS DIVISION

Facts every architect should know when planning gym seating

Pre-construction planning with Brunswick-Horn's experienced staff is yours for the asking. A free "sight-line" study will help you determine the proper seating unit for your client's gymnasium.

Folding Gymnasium Seating is a widely accepted and successful solution to the continuing need for multi-purpose gym facilities. However, there is a difference between a so-so installation and one which you, as the architect, can be confident in. It hinges on a few basic but important facts . . . facts such as these:

Fact: Only Brunswick-Horn offers positive, automatic row locks which mechanically lock each row in place when unit is extended. Spectator weight is not required to lock each row.

Fact: No floor anchors are required on Brunswick-Horn Folding Gymnasium Seating. Brunswick units employ wheels on *all* tubular column supports. Floors may expand and contract without danger of buckling.

Fact: Side sway is eliminated through the use of metal cross bracing. Brunswick units use no wood in any structural members.

Fact: Spectator comfort is a prime consideration in the design of Brunswick-Horn equipment. Chair height seats with plenty of toe and heel space guarantee comfort. Spectators do not need to rise to let traffic through.

Fact: The Brunswick-Horn design means savings in ease of maintenance. Tilting foot boards, and skirt boards that sweep the seat boards, push litter to the floor. Tubular column supports extend and fold in the same plane; there are no staggered wheels to carry litter to the rear and under the unit.

Fact: Four *tubular* column supports (not two) support each 16 foot unit. Angles and columns are not used for support in the Brunswick design.

See SWEET'S 22 J / Ho

Brunswick Horn

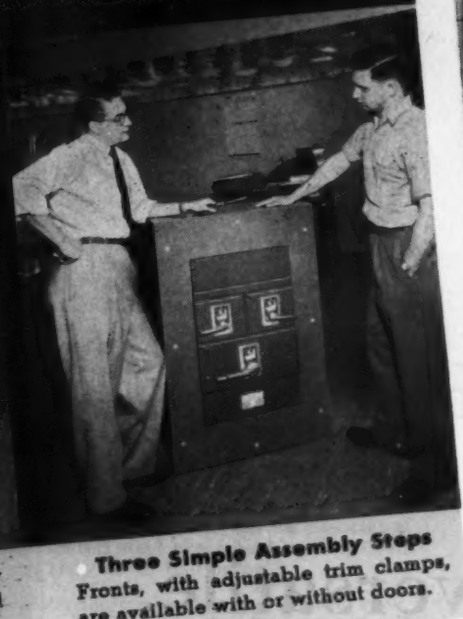
THE BRUNSWICK-BALKE-COLLENDER COMPANY
Horn Division • Marion, Virginia

Right off your Square D Distributor's shelf!

New QMB Saflex Distribution Panelboard

Exactly the Power Panelboard you want—when you want it. Your Square D Distributor stocks boxes, interiors and plug-in units which can be quickly assembled to meet virtually any specifications. Above, interior ready for easy mounting in box.

Plug-in Units are installed easily on tubular bus bars. The solid neutral can be changed in minutes. Here is flexibility that reduces "down time" and saves money.



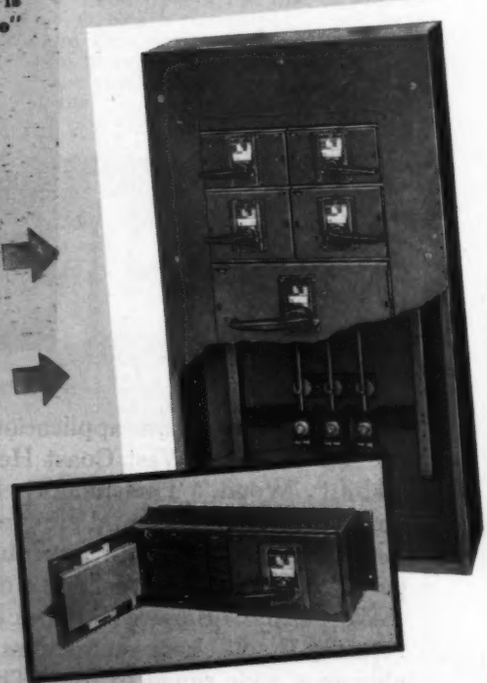
Three Simple Assembly Steps Fronts, with adjustable trim clamps, are available with or without doors.

With ALL these Quality Features

INTERIORS are flexible and adaptable to almost any service and voltage. Plug-in units and solid neutral can be changed simply and quickly.

BOXES provide generous wiring space.
FRONTS furnished with or without doors have adjustable trim clamps.

UNITS have quick-make, quick-break switch mechanism, visible blades and are horsepower rated. 30, 60, 100 and 200 ampere units are plug-in, while 400 and 600 ampere units are bolted to the bus.



•Underwriters' Approved for Service Entrance

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

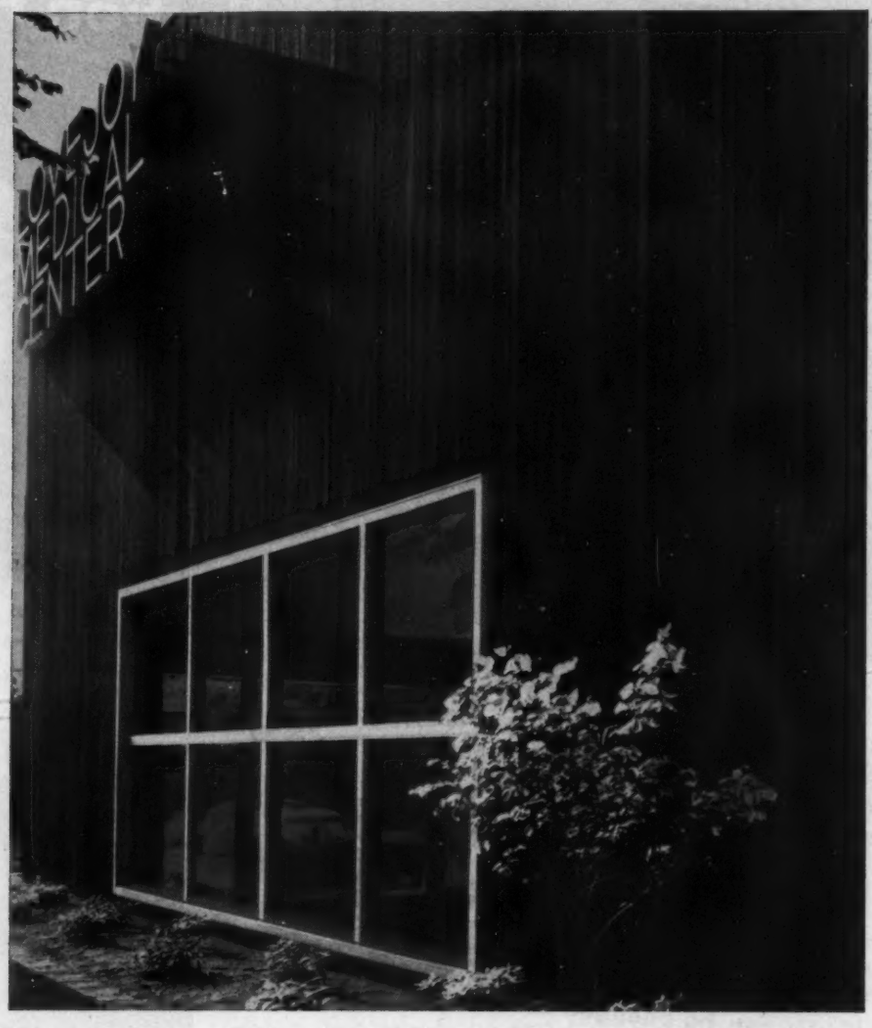
THIS BRAND NAME ON LUMBER ALSO BRINGS YOU

A WIDE VARIETY OF *West Coast Hemlock Products*

★

West Coast Hemlock is versatile, too!

★



Above you see a unique application of Weyerhaeuser 4-Square West Coast Hemlock, the "Ability Wood." This modern building is finished with tongued and grooved Hemlock clear board siding—with the rough side exposed. It is creosote-stained to a dark brown.

West Coast 4-Square Hemlock is called the "Ability Wood" because it serves so dependably in a wide range of uses. This durable, kiln-dried lumber is light in weight, easy to work, and possesses desirable strength properties needed for framing and sheathing. Also, West Coast Hemlock lumber is widely known for its excellent nail-holding properties.

The beautiful light color, straight grain, even texture, freedom from pitch pockets, and remarkable paint-holding qualities contribute much to the desirability of Hemlock for ceiling, flooring, siding, molding and other finish uses.

These features explain the popularity of Weyerhaeuser 4-Square West Coast Hemlock Lumber among architects.

Ask to see this fine "Ability Wood" at the yard of your Weyerhaeuser 4-Square Lumber Dealer, or write for literature.

Weyerhaeuser Sales Company

ST. PAUL 1, MINNESOTA

New materials mean better homes

...now a new material means better heating

Every year homes become better and better—thanks in part to the wonderful new array of materials science and industry are bringing to the building industry. Now a new material gives you heating and air conditioning you can install with the knowledge that you could sell your customers nothing better. Yet you get the benefits of this new material in units that cost *no more* than those you are now selling.

The new material we're talking about is Ceramic-Coated steel in Permaglas heating and air-conditioning units. The miracles of research and production that brought about famous glass-lined Permaglas water heaters now give that resistance to rust and corrosion to heating and cooling units. Result: vast resistance to heat and the products of combustion, *plus* an end to rusting from condensation associated with cooling. Ceramic-Coated steel gives heating and cooling units life expectancy they never had before!

If you're not selling Permaglas heating and cooling now, you'd better investigate. You have a full line to sell, all backed by the famous A. O. Smith guarantee . . . you have a merchandising program that means positive profits . . . and you'll have a future in heating and cooling that's so bright (and so near), that you'll hardly believe it. Better write us now for full details.

Permaglas®
HEATING AND AIR CONDITIONING

Through research ...a better way

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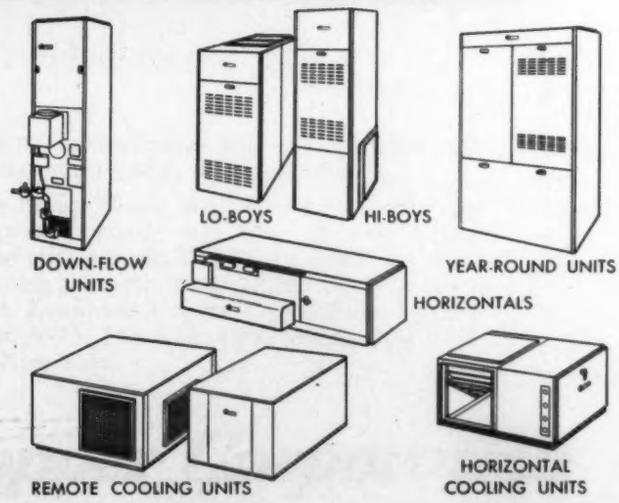


Sales Department, Permaglas Division,
A. O. SMITH CORPORATION, Kankakee, Illinois Arch R-1055
Please rush me details about Permaglas Heating and Cooling.

Name_____ Title_____

Company_____

Address_____

City_____ Zone___ State_____

WHICH HOUSE

☐ THE ONE ON THE LEFT

☐ THE ONE ON THE RIGHT

Note the 3-wire feed-in on the right-hand house. There's your clue!

All other things equal, *this* is the home to buy. With its 100-ampere service entrance, it can have all the facilities for modern electrical living: Wires large enough to carry power plus . . . plenty of outlets to handle the many electrical appliances in use today, as well as provisions for *more* appliances in the future!

WOULD YOU BUY?

Such a home, thanks to wise planning, will far outlive its left-hand twin in usefulness, value and marketability. It is a home that's easier to live in, *easier to sell!*

More than ever before, the buyer of homes looks today for quality in every detail. He knows he is living an electrical life, seeks a home that will fill all his electrical needs both today *and* tomorrow. You can give him such a home – and add to your reputation as well – by planning with an accent on sound, *adequate* wiring!

Free Home Wiring Wall Chart! Send today for Kennecott's handy wall chart showing typical home circuit loads. Use it as a check list when planning home electrical systems. For your copy, write Kennecott Copper Corporation, Department A-95, 161 East 42nd Street, New York 17, New York.

Kennecott Copper Corporation

Fabricating Subsidiaries: CHASE BRASS & COPPER CO. • KENNECOTT WIRE & CABLE CO.

NEW LANKENAU HOSPITAL, Philadelphia, Pa.

$10,000,000 Lifeline on the Main Line

The people of greater Philadelphia take their health seriously. In the past ten years they have spent more than fifty million dollars in developing hospital facilities to cope with rising population trends. One of their most impressive achievements in this field has been the $10,000,000 new Lankenau Hospital pictured above. In terms of conception, design and construction, it is without doubt one of the greatest institutions of its kind in America.

We are proud to say that the people who planned the building of this superb hospital chose to protect it with a Barrett Roof. This wise decision follows a precedent established by generations of leading architects who have consistently preferred Barrett Roofs for the protection of America's most important public, commercial and industrial buildings.

BARRETT DIVISION, Allied Chemical & Dye Corporation, 40 Rector St., N. Y. 6, N. Y.; 205 W. Wacker Drive, Chicago 6, Ill.; 36th St. & Grays Ferry Ave., Philadelphia 46, Pa.; 1327 Erie St., Birmingham 8, Ala.; Melrose Building, Houston 2, Texas.

Allied Chemical

ARCHITECT: Vincent G. Kling
ROOFER: Warren-Ehret Co.
GENERAL CONTRACTOR: Wark & Co.
All of Philadelphia

Barrett Specification Roofs

THE MOST IMPORTANT ROOFS ARE

BARRETT ROOFS

OVER 100 YEARS OF EXPERIENCE

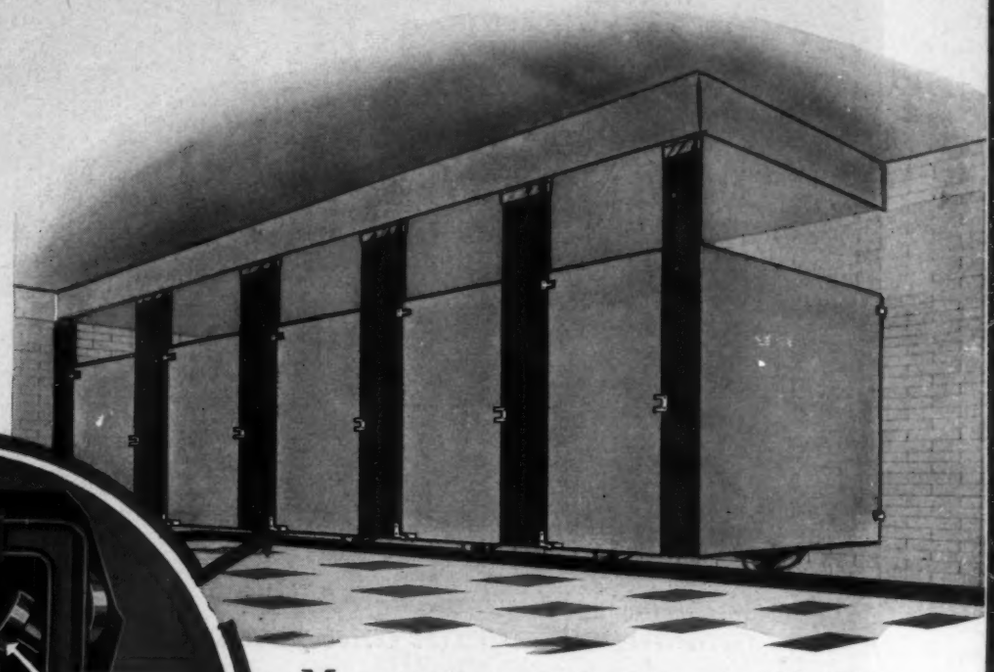
No. 2
OF A SERIES

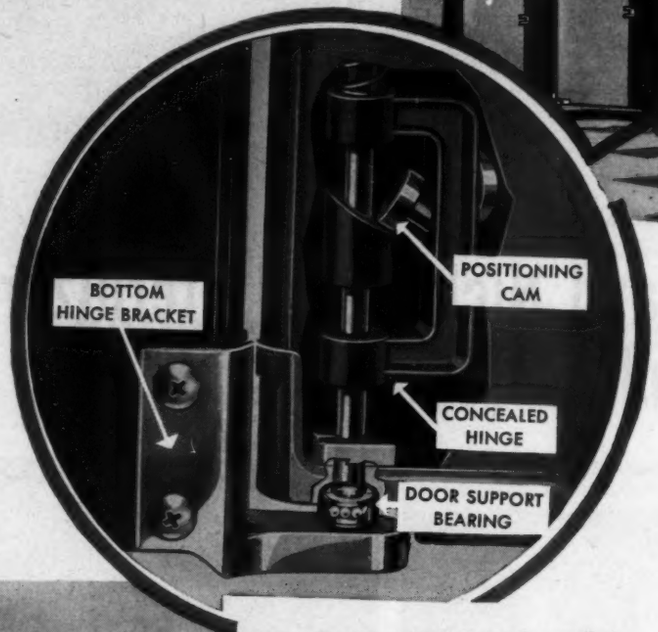
WHAT TO LOOK FOR IN QUALITY TOILET COMPARTMENT CONSTRUCTION

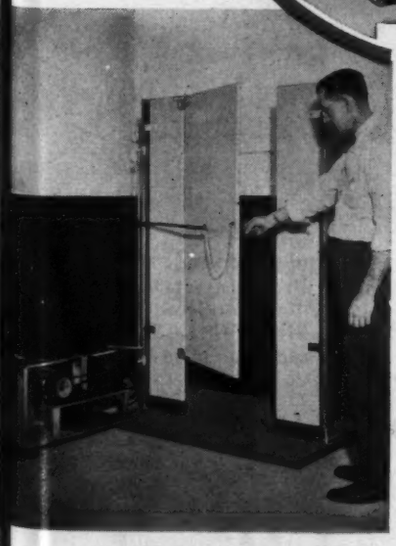
One of many major differences that give you your money's worth in satisfactory service!

301,000 cycles of use

WITHOUT NOTICEABLE WEAR







THE SANYMETAL 7700 HINGE is an adjustable controlled-action hinge which supports the door wholly on a thrust ball-bearing. The hinge is concealed within the door thickness—tamper-proof and dirt-proof. The position control is a separate spring-loaded ball-bearing roller and cam, supporting no weight. Constructed thus the door does not rise or lower as it swings. Anti-friction bearings make motion easy, and bearings are of "Oilite" and graphite types, requiring no lubrication.

LABORATORY CERTIFIED: To test the Sanymetal 7700 Hinge, an independent nationally known laboratory mounted a Sanymetal door from stock in the usual way using a Sanymetal 7700 Hinge taken from stock at random. After the test, the laboratory checked the positioning, motion and alignment of the door, then disassembled and inspected the hinge parts, and reported "all working parts in satisfactory condition."

MANY quality construction features found in *all* Sanymetal Toilet Compartments mean longer satisfactory service. These features result from Sanymetal's 41 years' experience manufacturing compartments. Be sure you get this quality.

A feature to look for is the Sanymetal *7700 Bottom Hinge* on compartment doors. Notice that it is concealed within the normal thickness of the door, having no cumbersome exposed hinge mechanism. Thus it produces clean, architectural door lines. It is a longer lasting, easier working, more reliable hinge. In independent laboratory test this hinge, mounted in a door, was opened and closed 301,000 times. After this test the door still operated perfectly and the hinge showed no noticeable wear!

This hinge, contributing to long satisfactory service, is one of many special features standard at no extra cost on all Sanymetal Compartments. Ask your Sanymetal Representative about all these features not offered by others.

See Sweet's or send for Catalog 92, describing all Sanymetal Compartments. If you wish, we will mail other advertisements of this series on quality construction details.

This long-life feature is **STANDARD** *at no extra cost on all types of Sanymetal Compartments.*

THE
Sanymetal®
PRODUCTS COMPANY, INC.
1689 URBANA ROAD, CLEVELAND 12, OHIO

Architect: Vincent G. Kling.

Visit Lankenau Hospital and you'll see...

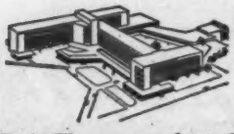
how Castle's all-Monel and Nickel-Clad sterilizers dovetail into good hospital planning

Speed for Surgery. This all-Monel* team provides fast sterilizing service for two operating rooms. At left, Castle's new Hi-Speed instrument unit. At center, sterile water supply. In recess, a vertical instrument washer-sterilizer. Easy-to-clean Monel shortens clean-up time. Also permits rapid heating and fast cooling.

Versatility for Central Sterile Supply. High capacity all-Monel and rectangular Nickel-Clad units accept varied loads. Thermatic Controls and Recording Thermometers give supervisor full-automatic, attention-free operation. Monel and Nickel-Clad Steel prevent corrosion and stains, permit easy cleaning.

Volume for Formula Rooms. This large, Nickel-Clad sterilizer opens into both sterile and non-sterile formula rooms . . . handles peak loads easily. Its Nickel-Clad chamber and doors resist lactic acid and hospital solutions.

*Reg. Trade Mark



Service areas shown are housed in central section of Lankenau Hospital (Overbrook, Pa.) They were planned with the help of Castle's Hospital Planning Service . . . a free service available to you through Castle's local office. Write Wilmot Castle Co., Box 629, Rochester 2, N. Y. for information on all-welded Monel and Nickel-Clad sterilizers.

INCO Nickel Alloys

Nickel-Clad Steel and Monel

. . . for low maintenance sterilizers

The INTERNATIONAL NICKEL COMPANY, Inc. 67 Wall Street New York 5, N. Y.

Veterinary Research Unit—U. of Fla.
Myrl Hanes Associates—Architects
Kirkpatrick & Pierson—Contractor

FOUR BASIC DEMANDS

of architects and builders met with Brown & Grist Window Walls

According to its architects, the Veterinary Research Unit at the University of Florida called for the basic requirements encountered in most structures: Durability. Handsome appearance. Functional design. A reasonable cost.

In meeting these requirements, they chose Brown & Grist window walls above all others analyzed.

Flexible Brown & Grist window walls offered numerous other advantages, such as: Good insulation. Superior weatherproof ventilation. Greater floor space.

For full details on this new type wall construction, call, write or wire Brown & Grist. Our engineers will work closely with you in meeting your *own* specifications . . . After all, custom work is a Brown & Grist custom.

Fast, Simple Erection

High-Strength, Light Weight

Flexibility in Design & Materials

Savings in Construction & Labor

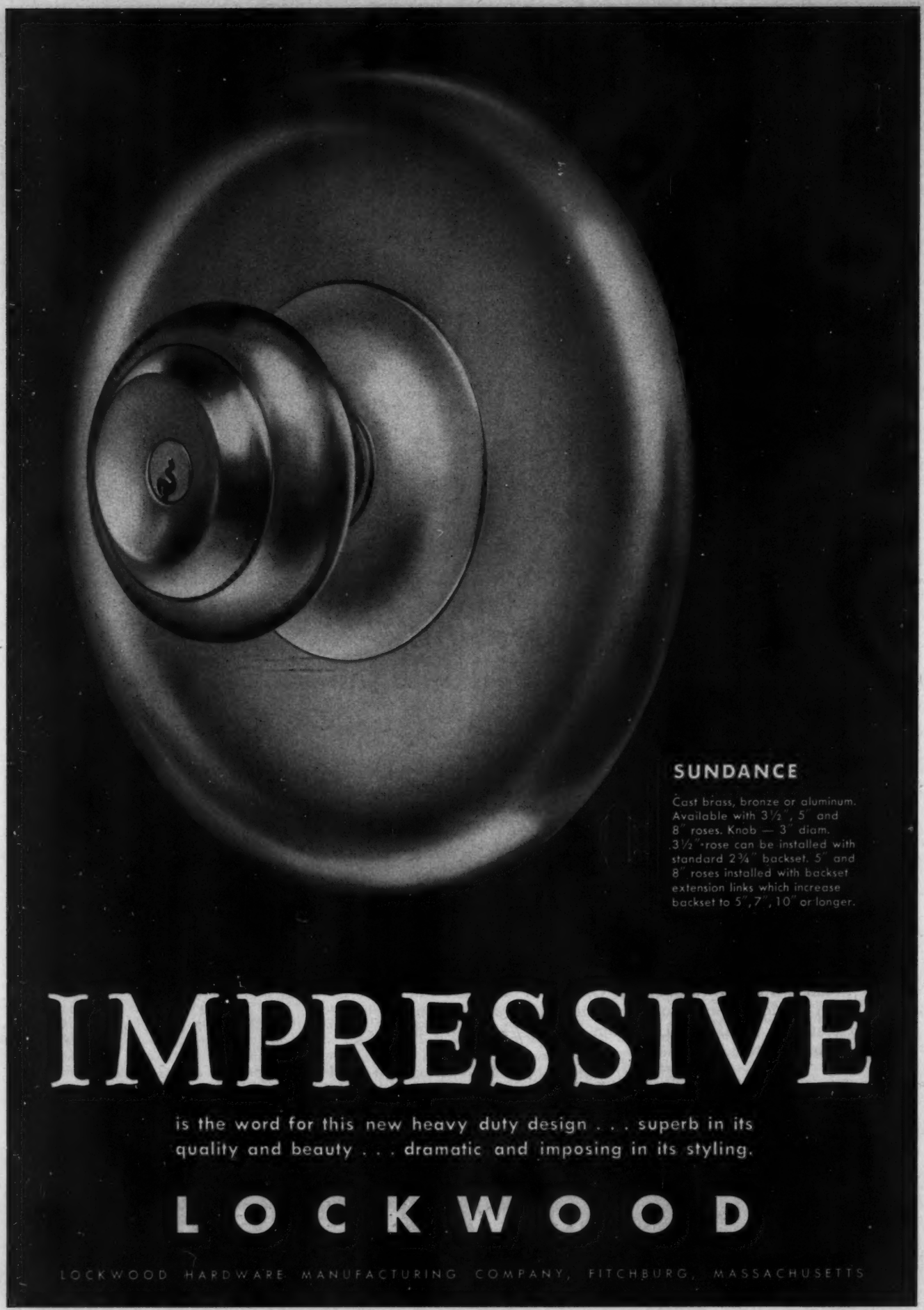
Beauty and Durability

Low Maintenance

B•G

BROWN & GRIST, Inc.

25 Tyler Avenue • Warwick, Virginia • Phone 8-1559



SUNDANCE

Cast brass, bronze or aluminum. Available with 3½", 5" and 8" roses. Knob — 3" diam. 3½"-rose can be installed with standard 2¾" backset. 5" and 8" roses installed with backset extension links which increase backset to 5", 7", 10" or longer.

IMPRESSIVE

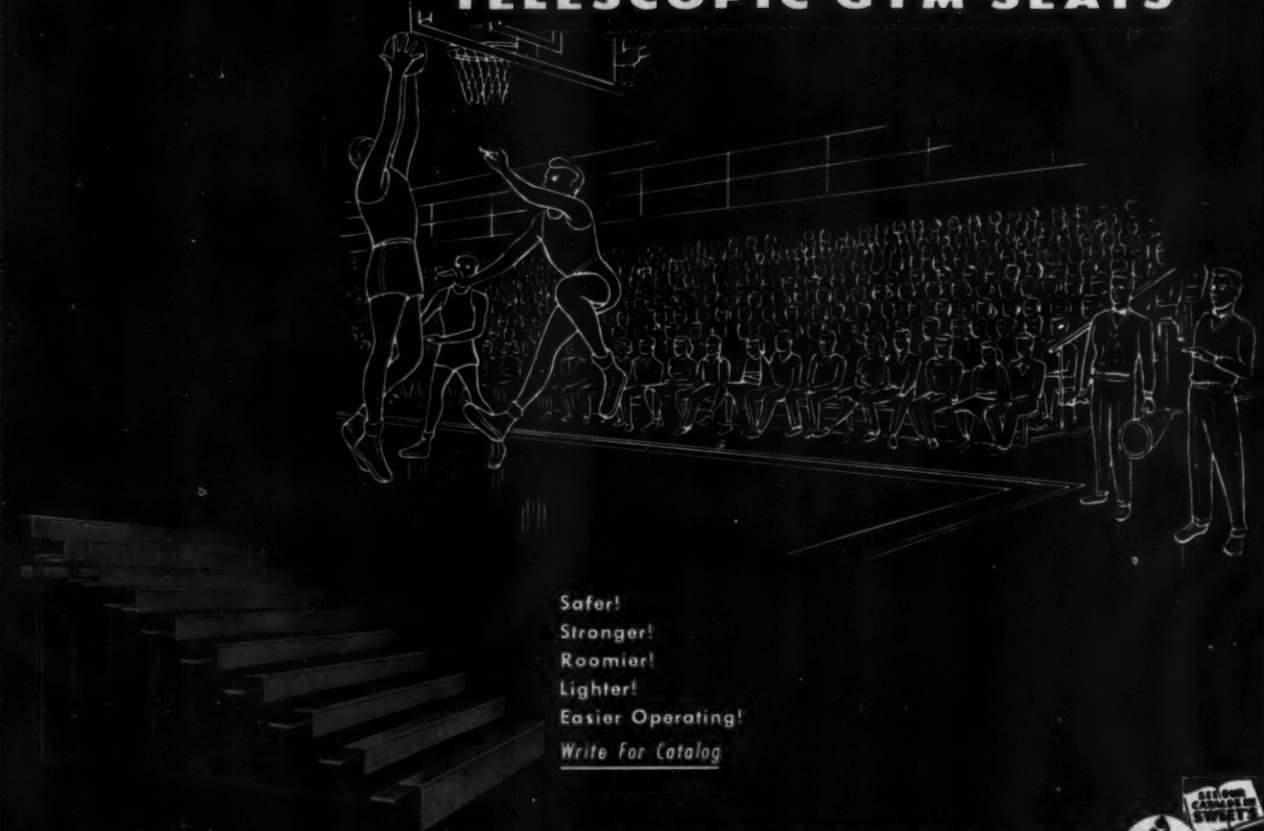
is the word for this new heavy duty design . . . superb in its quality and beauty . . . dramatic and imposing in its styling.

LOCKWOOD

LOCKWOOD HARDWARE MANUFACTURING COMPANY, FITCHBURG, MASSACHUSETTS

Specify the best...
then Insist on it!

MEDART
TELESCOPIC GYM SEATS*

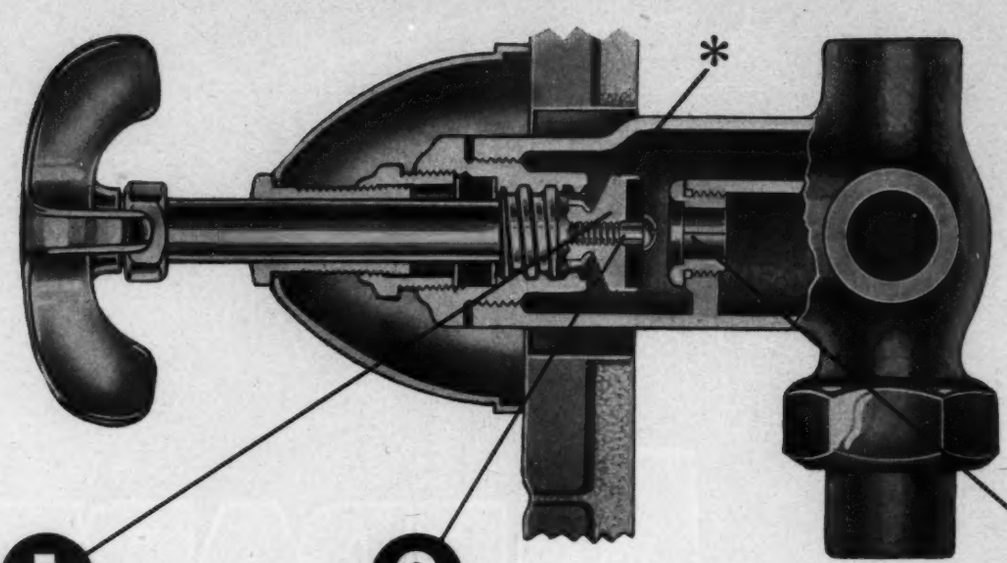


Safer!
Stronger!
Roomier!
Lighter!
Easier Operating!
Write For Catalog

FRED MEDART PRODUCTS CO., INC.
3540 DeKalb Street St. Louis 18, Mo.

*Medart Telescopic Gym Seats are fully protected by U. S. Patents

Let me tell you about my operation...



***Monel Swivel Disc** — Speakman swivel construction decreases the wear on washer and valve seat to an absolute minimum. In the COMMANDER, the instant the washer seats, it stops rotating. Washer and seat life are more than doubled . . . leaks are reduced to a minimum.

*Identified by the Grooved Line.

Monel Washer-Retaining Screw—Any plumber, maintenance man or homeowner knows of the trouble and inconvenience caused by the corrosion of ordinary washer retaining screws which break off at the time of re-washering. The COMMANDER *Monel* Screw never corrodes—may be removed easily—no need for costly, time-consuming labor.

Monel Renewable Valve Seat — Note design which raises valve seat to give unrestricted waterway and provides full water supply when valve is open. The valve seat, one of the most vulnerable wearing parts, is machined of heavy, durable, non-corrosive *Monel* for all COMMANDER Valves.

It's what's inside a plumbing fixture fitting that provides perfection operation. The Speakman COMMANDER Valve has built its name on its operation. It has been expertly designed, tested and engineered to function faultlessly under the most severe water conditions.

Inside every COMMANDER Valve are the very highest quality parts, precision machined and engineered to give COMMANDER Line products their reputation for being the "best in brass." That's why the Speakman Company has never been called on to replace a complete shower or fixture fitting in the COMMANDER Line because it wore out.

Write today for information on the Speakman COMMANDER Line. See for yourself why architects and engineers specify "Speakman COMMANDER" when they want dependable performance, distinctive beauty, sensible price.

SEE OUR CATALOG IN SWEET'S

SPEAKMAN

COMMANDER SHOWERS AND PLUMBING FIXTURE FITTINGS

SPEAKMAN COMPANY, WILMINGTON 99, DELAWARE

↑ Colorful patterns with "Kalistron" wall covering are a feature of the **Allen Road School,** North Syracuse, N. Y.

← Five years' service for wainscote covering has left no disfiguring marks. "Kalistron," a specially processed KRENE sheeting, by **Kalistron Division of U. S. Plywood Corp.,** N. Y. 36, N. Y.

A PLUS...in beauty, service, economy

Here is wall covering with beauty as you like it... bright and gay for colorful school walls...cheerfully restful for hospital corridor wainscoting.

It is superior in durability because it is made of KRENE. The smooth surface of this extra-quality material is tough and flexible to stand up to hard use without wear and cracking. And KRENE resists acids, alkalies, alcohol, grease, oil, cleaners. Soil wipes from the surface...easily, quickly.

Whatever the room, wherever the building, specify wall covering and upholstery made of KRENE. You will assure rich beauty, and dollar-protecting service and ease of maintenance.

MADE OF BAKELITE®

Krene®

®REGISTERED TRADE-MARKS OF UCC

BAKELITE COMPANY, *A Division of Union Carbide and Carbon Corporation* UCC 30 East 42nd Street, New York 17, N. Y.

TROUBLE-SHOOTING WILL BE NO TROUBLE IN THIS SEVEN FOOT *concrete utility tunnel*

Bakersfield College
Kern County High School and Jr. College District
Bakersfield, Calif.

Architect
Wright, Metcalf & Parsons
Bakersfield, Calif.

Mechanical Engineer
Chester D. Walz
Los Angeles, Calif.

General Contractor
James I. Barnes
Redwood City, Calif.

Plumbing & Heating Contractor
Owen Clark Corporation
Bakersfield, Calif.

The quickest, cheapest way to locate and repair utility breaks is to walk right up to the trouble zone and go to work.

That's the way these lines, supplying heat, chilled water, light, and power to new Bakersfield College building, will be maintained.

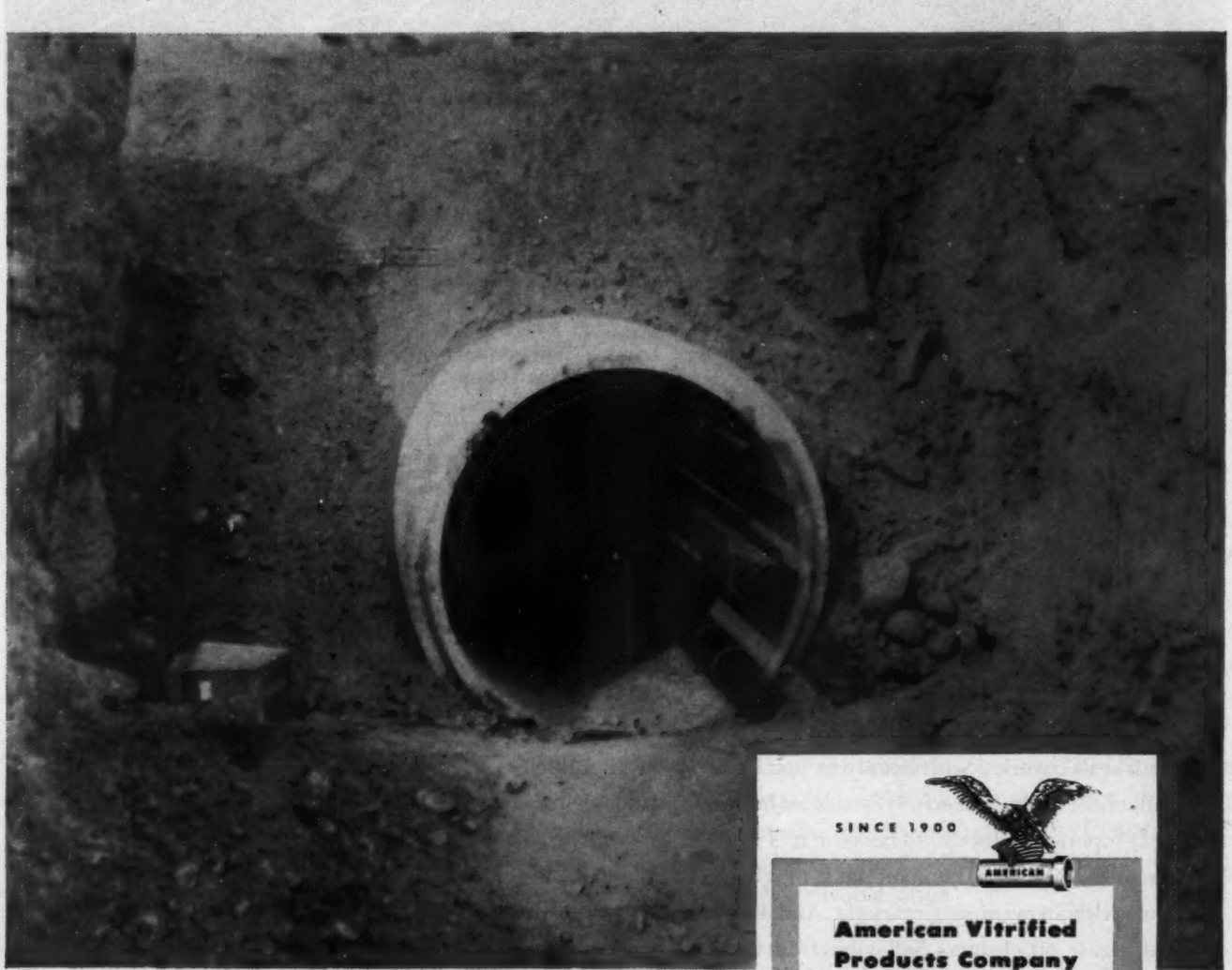
American Vitrified Products supplied several thousand feet of specially manufactured concrete pipe for this project. Steel bands 3/8" thick, 3" wide were welded to the rim cage and wrapped around the inner core so they would be exposed on the inside surface when the pipe was completed.

Supporting brackets, holding the utility lines, were then welded to the bands on eight foot centers.

Complicated assignments such as this are everyday jobs for American. Years of experience and technical know-how guarantee customer satisfaction.

Concrete pipe is just one of the many products manufactured in our plants across the nation. We also produce the new Amvit Jointed Clay Pipe, flue liners—both glazed and unglazed, and clay liner plates.

For more information, write or call American Vitrified Products Co., National City Bank Building, Cleveland, Ohio, or our office nearest you.



This pipe was specially designed to hold supporting brackets for the utility lines.

Plants Across the Nation...Brazil, Indiana • Chicago, Illinois • Cleveland, Ohio • Crawfordsville, Indiana • Detroit, Michigan • East Liverpool, Ohio Fenton, Michigan • Grand Ledge, Michigan • Lisbon, Ohio • Los Angeles, California • Milwaukee, Wisconsin • South Bend, Indiana • Uhrichsville, Ohio

3 R's go modern in this up-to-date classroom. Light diffused through ceiling panels made of BAKELITE Rigid Vinyl Sheets provides the bright uniform light so essential for schoolwork. Ceiling by **Luminous Ceilings Inc.,** Chicago 47, Illinois.

For comparison, here's what the lighting in classroom looked like before renovation. Notice high, broken, ceiling area—sharp shadows and dusty pipes. New plastic ceiling is much lower, conceals all light fixtures and ceiling projections.

SHADOWLESS LIGHTING FOR READING AND WRITING

...from an illuminated ceiling made of BAKELITE Rigid Vinyl Sheets

No eyestrain here! This model classroom* features the very latest in school lighting—continuous fluorescent strip units behind a ceiling of corrugated, milk-white plastic sheets. This diffused, high-level illumination kills shadows completely . . . bathes the entire room in soft uniform brilliance.

Ceiling panels are made of BAKELITE Brand Rigid Vinyl Sheets about as thick as heavy paper. They rest on an aluminum frame hung from the true ceiling. They're quickly installed and easy to remove for cleaning or maintenance. In place, they conceal pipes, ducts and other ceiling projections. But they don't interfere with sprinkler systems because they soften and fall at about 150 deg. F. Sound-absorbent pads fastened to the support frame will provide excellent acoustical conditioning.

These panels keep their good looks for years. They can be wiped clean or even scrubbed in soap and water, if necessary. And BAKELITE Rigid Vinyl Sheets resist yellowing, warping or cracking upon aging. They resist moisture, oil and combustion and are dimensionally stable.

Include practical, beautiful plastic ceilings in your future designs. And remember BAKELITE Rigid Vinyl Sheets for screens, lampshades, signs and scores of other architectural applications. For more data write to: Dept. AR-3.

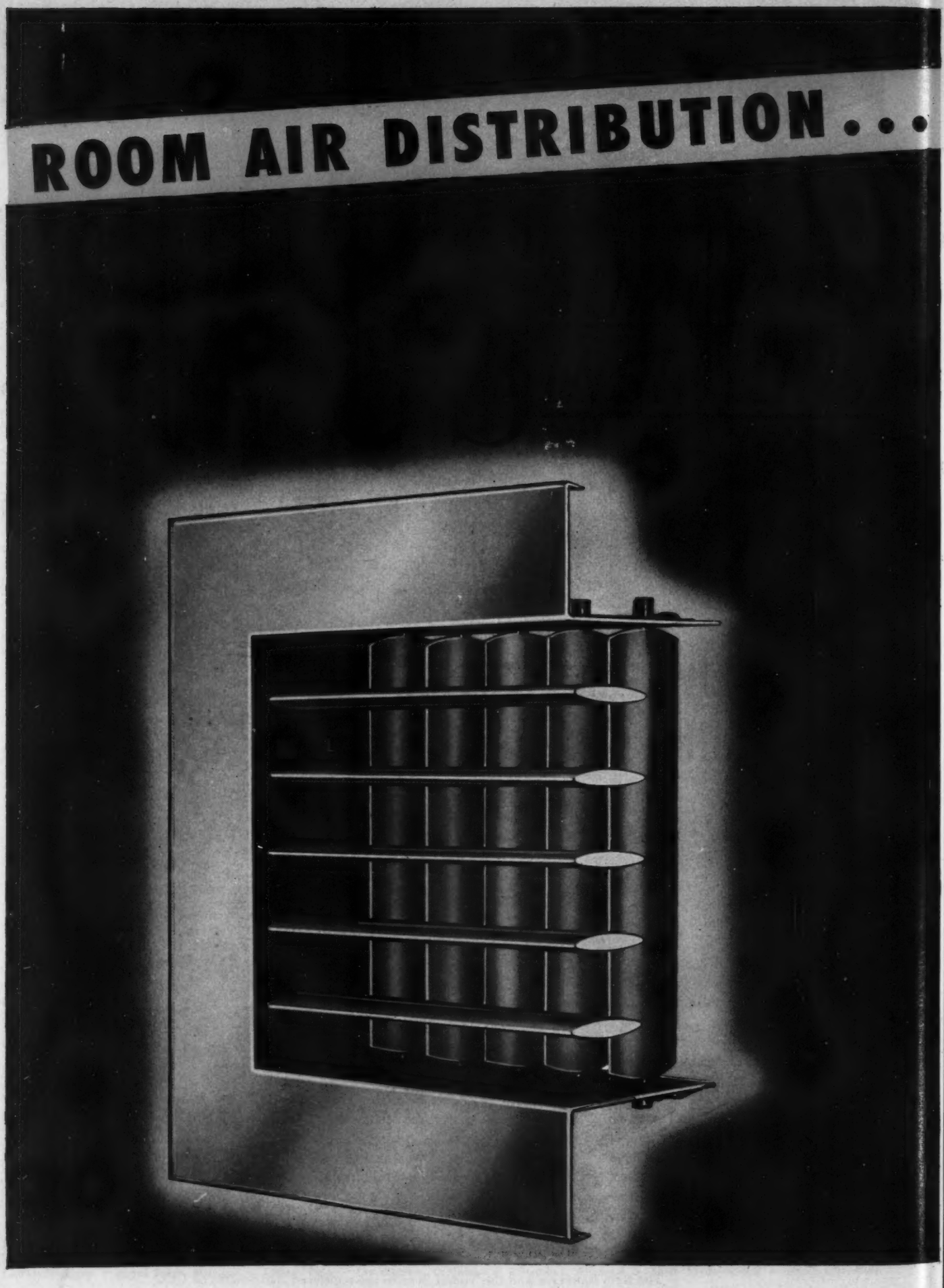
**Model classroom designed by New York University School of Education in conjunction with officials of the National Education Association and Eggers and Higgins, New York architects.*

BAKELITE
BRAND
Rigid Vinyl Sheets

BAKELITE COMPANY, *A Division of Union Carbide and Carbon Corporation* UCC 30 East 42nd Street, New York 17, N. Y.

The term BAKELITE and the Trefoil Symbol are registered trade-marks of UCC

ROOM AIR DISTRIBUTION . . .



IS NOT COMPLICATED

50% OF GRILLE ENGINEERING & ADJUSTMENT PROBLEMS

NEW MORE AIR CONTROL BUILT-IN

By engineering MORE AIR CONTROL per square inch into each diffuser and grille . . . *right at the factory* . . . Titus simplifies all phases of grille *specification, selection, installation* and *adjustment.* Eliminates any necessity for special factory schooling or instruction at the contracting, engineering or tradesman level. Any workman can install a Titus grille without unbalancing the whole expensive system.

NEW MORE SIMPLE INSTALLATION

Install grille in 2 easy steps. (1) Fasten grille in place with screws. (2) Adjust louvers for correct air patterns. Titus *makes it easy, makes it simple* to obtain correct air patterns . . . patterns that give *maximum room comfort . . . from any air conditioning system.*

NEW MORE FLEXIBILITY OF ADJUSTMENT

Most important . . . any miscalculations that have crept in during the installation period may be simply and easily corrected by quick adjustment of streamlined Airfoil louvers. ADJUSTING IS DONE *WITHOUT* REMOVING GRILLES FROM WALLS. COSTLY TIME-CONSUMING "CALL BACKS" ARE ELIMINATED.

NEW SIMPLIFIED, FOOL PROOF DESIGN

All Titus grilles and diffusers are built under the most rigid, precision-controlled standards. They give finest air diffusing performance. Air control cannot be lost at the installation level. Titus grilles are so carefully constructed it is almost impossible to have anything but correct diffusion of air . . . no matter who installs or adjusts them.

SETS PERFORMANCE STANDARD FOR ENTIRE AIR CONDITIONING SYSTEM

Directs air where it is needed. Keeps uniform temperatures throughout room. Eliminates old-fashioned drafts . . . low level stratification. Truly controls comfort . . . *at the room level* . . . THE ONLY AREA WHERE THE UNIT'S ENTIRE HEATING OR COOLING PERFORMANCE IS JUDGED.

FREE CATALOGS

Get information on the complete line of Titus grilles now.
Order actual samples. Look at them. Hold them in your hands. Test them. See for yourself why Titus can save you money. Can give you better air diffusion performance . . . in every type of building where air conditioning is used.

TITUS MANUFACTURING CORP., WATERLOO, IOWA

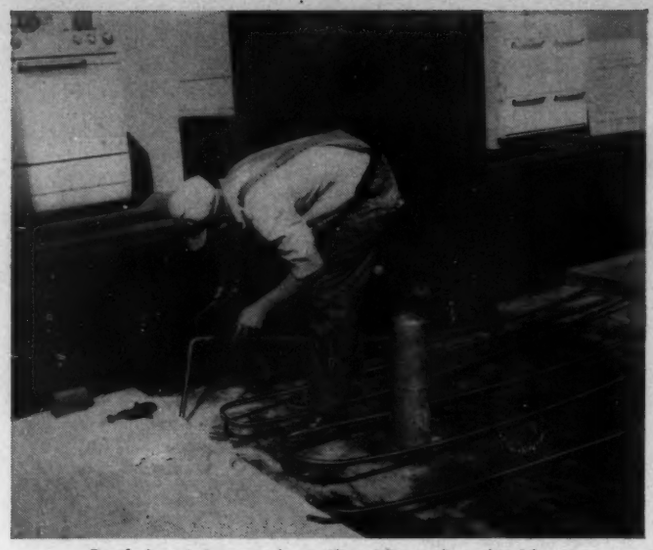
Gentlemen: I wish to simplify my grille installation problems and to lower my grille installation costs. Please send me complete information on the following Titus grilles.

☐ Supply Grilles & Registers ☐ Return Air Grilles ☐ Volume Controllers
☐ Frames and Accessories ☐ Gymnasium Grilles

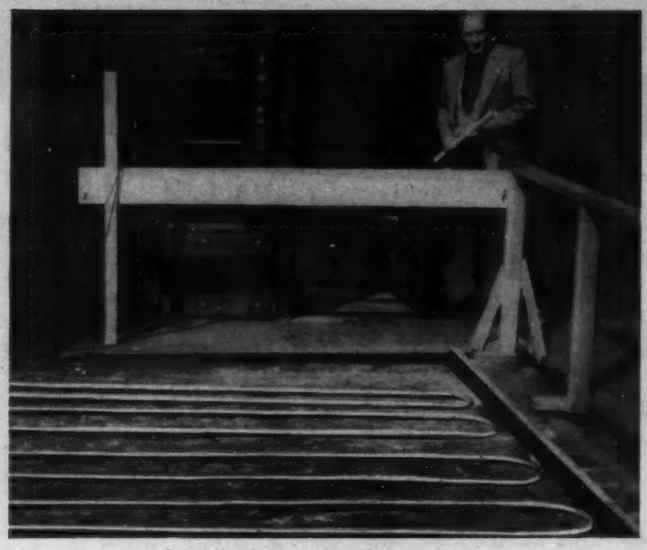
Name _____

Address _____

City _____ State _____



Leak-free joints made easily with torch and solder.



Section of system ready for paving.

Milwaukee Gas Light Company

MAKES SNOW GO

with Chase Copper Water Tube!

Blizzard snows and freezing rain don't stand a chance around 626 East Wisconsin, in Milwaukee! The Milwaukee Gas Light Company's sidewalks are always free of snow and ice—thanks to an efficient snow removal system of Chase copper tube!

The contractor, John S. Jung, used both Chase Type L copper tube and Chase copper solder-joint fittings in the installation. This combination is unsurpassed for easy, fast installation plus trouble-free performance over the years! You see, corrosion-resistant Chase copper tube comes in long lengths that are easily bent into position and require fewer joints. Tube and fittings are *made for each other,* so leakproof solder-joints are assured. They expand and contract *as one unit* with temperature changes!

Snow everywhere . . . but not around Milwaukee Gas Light Co. building!

Chase

BRASS & COPPER CO.

WATERBURY 20, CONNECTICUT • SUBSIDIARY OF KENNECOTT COPPER CORPORATION

The Nation's Headquarters for Brass & Copper (†sales office only)

Albany†	Chicago	Detroit	Los Angeles	New Orleans	Rochester†
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Baltimore	Cleveland	Houston	Milwaukee	Philadelphia	San Francisco
Boston	Dallas	Indianapolis	Minneapolis	Pittsburgh	Seattle
Charlotte†	Denver	Kansas City, Mo.	Newark	Providence	Waterbury

Amarlite Aluminum Entrances have been installed in the new Administration Building, Emory University, Atlanta, Georgia. Architects: Ivey and Crook

Amarlite aluminum entrances

How will they look to the class of '65?

The answer lies in the Alumilite finish — long the trademark of the Amarlite Entrance. Smooth and lustrous, it preserves the aluminum under a jewel-hard shell. More, Amarlite's welded *and* bolted construction unites enduring strength with rigid symmetry.

That's why Amarlite Entrances can take between-class poundings without fear or favor. Given only routine care, they will look as flawlessly beautiful ten years from now as they do today.

Important to SCHOOL building budgets

A recent survey based on contractors' costs shows that Amarlite school entrances with concealed panic hardware cost less installed than comparable steel or wood entrances. For your copy of this cost comparison, drop a card to American Art Metals Company, 433 Highland Ave., N. E., Atlanta, Georgia. You'll be interested in the figures.

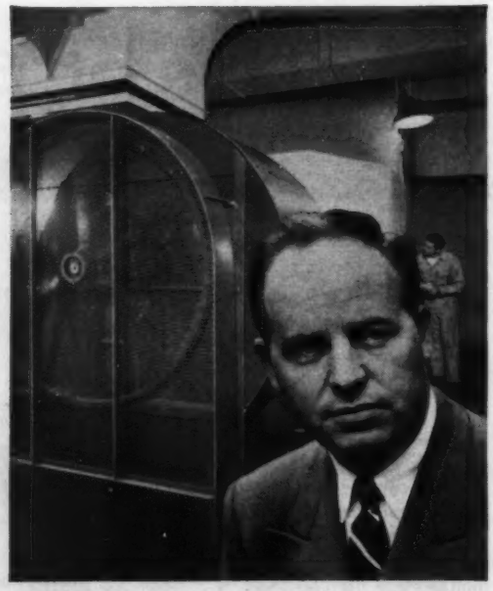
AMARLITE®

aluminum entrances
american art metals company

• ATLANTA, GEORGIA • BROOKFIELD, ILLINOIS • ENGLEWOOD, NEW JERSEY • DALLAS, TEXAS

New John Wanamaker Department Store, Wynnewood, Pa. Architects: Wallace & Warner; consulting engineers: Stewart A. Jellett Company; heating and ventilating contractors: Daniel J. Keating Company—all of Pennsylvania.

American Blower supplies the weather in Wanamaker's new suburban store



"Quiet operation is a big benefit of American Blower equipment," says Daniel J. Keating, Jr., air-conditioning contractor. "For over 37,000 cu. ft. of air is filtered, conditioned, recirculated every minute."

Except for entrance-and-exit doors, the new three-floor John Wanamaker Department Store in suburban Philadelphia has no exterior openings. Yet it is always comfortable inside, thanks to American Blower equipment—which furnishes conditioned air, summer and winter, to maintain an even and desirable temperature. Each store level has its own American Blower supply and return system.

Says Wanamaker's chief engineer, Frank Mescal—"In selecting air-handling equipment, one of our main requirements was that it must be free of noise and vibration. American Blower equipment was the perfect choice. For not only has it proved quiet, but trouble-free in operation as well."

If air conditioning is in *your* plans, why not talk to an experienced representative—at our nearest branch office.

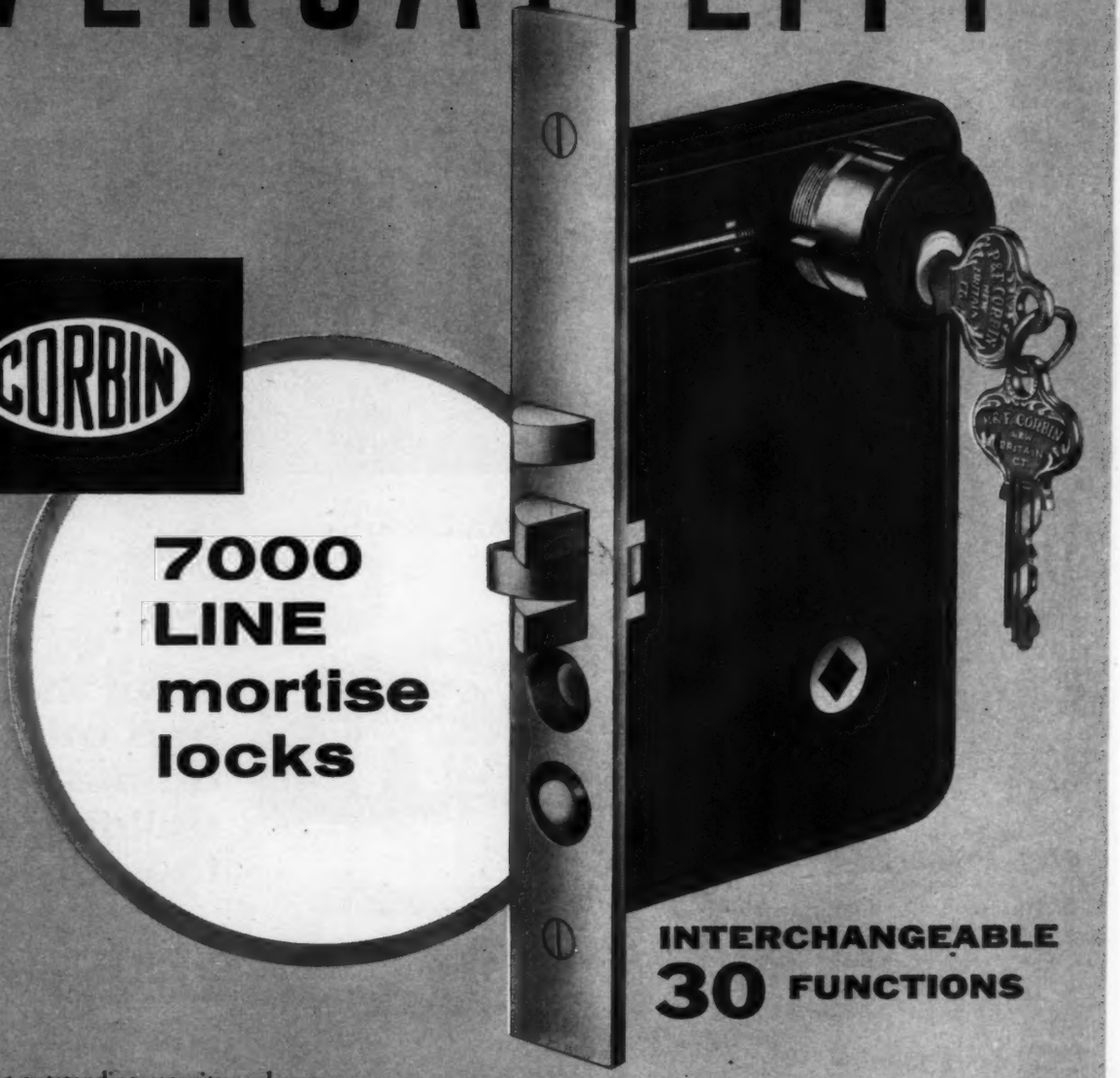
AMERICAN BLOWER CORPORATION, DETROIT 32, MICHIGAN
CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONTARIO
Division of American Radiator & Standard Sanitary Corporation

AMERICAN BLOWER

FUNCTIONAL VERSATILITY

CORBIN

7000 LINE mortise locks



INTERCHANGEABLE 30 FUNCTIONS

Designed for outstanding security and service, the Corbin 7000 Line Mortise Locks also have far greater versatility than any other form of lock can offer.

Corbin 7000 Line Mortise Locks, for example, are available in both Standard and Heavy Duty types. Each lock type has a uniform size case, making locks *interchangeable* in the same mortise. In addition, all parts are precision manufactured to allow quick, easy, inexpensive changes in function.

In all, several hundred possible combinations of locking functions and finishes can be obtained with but three base locks and two backsets!

Other Corbin 7000 Line advantages include 100% reversibility; extra heavy, long-throw latch bolts and dead bolts; balanced knob action for easier, longer-lasting operation; interior parts of heavy gauge cold form steel for strength and durability.

Time-tested in many of the world's largest commercial and institutional buildings —

Ask your Corbin dealer for complete details. Ask him, too, about Corbin's complete line of Builders' Hardware — a line that through honest service and honest value has made it *the world's most widely used builders' hardware.*

FIRST CHOICE IN

. . . at the monumental LIMA CENTRAL HOSPITAL

LIMA CENTRAL HOSPITAL
Lima, Peru

Owners: Seguro Social del Empleado
Lima, Peru
Chief Architect: Richard Malachowski
Lima, Peru
Associated Architects: E. D. Stone & A. L. Aydelott
New York, N. Y.
General Contractors: Consorcio de Ingenieros Contratistas Generales
Lima, Peru
Corbin Locks and other hardware by:
Carlos Hamann
Lima, Peru

. . . at these and other outstanding buildings the world over

INDIANAPOLIS COMMUNITY HOSPITAL
Indianapolis, Indiana

Architects: Daggett, Naegele & Daggett
Indianapolis, Indiana

General Contractors: Huber, Hunt & Nichols, Inc.
Indianapolis, Indiana

Corbin Locks and other hardware by:
Van Camp Hardware & Iron Co.
Indianapolis, Indiana

MAINE MEDICAL CENTER
Portland, Maine

Architects: Voorhes, Walker, Smith & Smith
New York, N. Y.

General Contractors: John A. Volpe Construction Co.
Portland, Maine

Corbin Locks and other hardware by:
King & Dexter Company
Portland, Maine

JR. COLLEGE and VOCATIONAL SCHOOL
San Diego, California

Architect: Frank L. Hope & Associates
San Diego, California

General Contractor: B. O. Larsen

Corbin Locks and other hardware by:
Gould Hardware and Machinery Co.

UNIV. OF ARKANSAS MEDICAL CENTER
Little Rock, Arkansas

Architect: Erhart, Eichenbaum & Rauch
Little Rock, Arkansas

Assoc.: Edward D. Stone, New York, N. Y.

General Contractors: W. R. Grimshaw Co.
208 Kane Bldg., Tulsa, Okla.

Corbin Locks and other hardware by:
Bush-Caldwell
Little Rock, Arkansas

RAINIER STAFF SCHOOL (Addition)
Seattle, Washington

Architect: Naramore-Bain-Brady & Johnson
Seattle, Washington

General Contractors: Norge Construction Company
Seattle, Washington

Corbin Locks and other hardware by:
Schwabacher Hardware Company
Seattle, Washington

GUYMON SENIOR HIGH SCHOOL
Guymon, Oklahoma

Architect: Caudill-Rowlett-Scott
Oklahoma City, Oklahoma

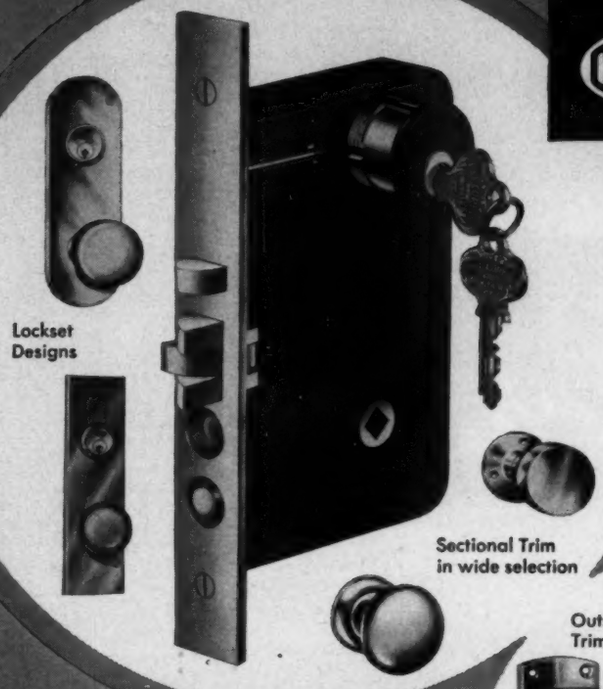
General Contractors: Hoke Construction Co.
Stillwater, Oklahoma

Corbin Locks and other hardware by:
Kilpatrick Brothers
Oklahoma City, Oklhaoma

FINISHING HARDWARE

CORBIN

7000 LINE MORTISE LOCKS

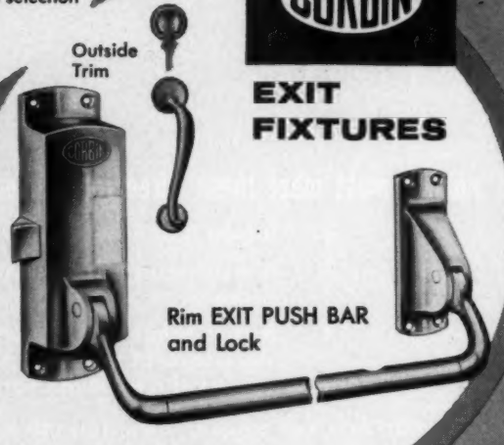


Lockset Designs

Sectional Trim in wide selection

CORBIN

EXIT FIXTURES

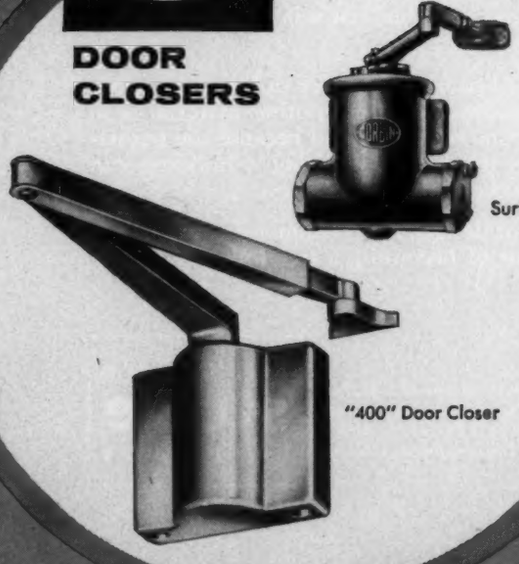


Outside Trim

Rim EXIT PUSH BAR and Lock

CORBIN

DOOR CLOSERS



Surface Type

"400" Door Closer

CORBIN

The World's most widely used BUILDERS' HARDWARE

P. & F. CORBIN DIVISION

The American Hardware Corporation
New Britain, Connecticut

Natural STONE

. . . your best bet for continuing the building boom!

Good building must meet these three requirements:

1. It must give honest value, dollar for dollar down to the last penny;
2. It must create happy clients who are as excited about the fine appearance of the building as they are about its workmanship;
3. It must enhance the reputation of the builder so that he may hold the respect of those who have done business with him, and gain the respect of a multitude more.

STONE is your *best bet* to gain these objectives: because dollar for dollar stone gives more value than any other material you can buy today; because no other material is so essentially beautiful and offers such flexibility for smart design; and because the permanent beauty and long-term economy of stone is the best advertising a building can have — your strongest advocate for continued success in your business.

The possibilities of stone for color, for pattern, for design, for economy of construction are limitless. No wonder it is popular to the point of becoming a trend.

For additional information about STONE, *its variety, characteristics, availability or uses, write the Building* STONE *Institute, 2115 Martindale Avenue, Indianapolis, Indiana.*

BUILDING **stone** INSTITUTE

PHOTOGRAPH BY DEWEY G. MEARS

This electrical surge test is one of the 258 tests that every G-E ballast receives during the manufacturing cycle. This test subjects G-E ballasts to the most severe conditions they will ever encounter in actual operation; assuring you of long ballast life and low lighting costs.

Flora* shows you why . . .

Superior Quality Control of G-E Ballasts Helps You Save Lighting Dollars

Lighting engineers, designers, and users have learned to depend upon the consistently high quality of General Electric fluorescent lamp ballasts.

They know that the rigid material specifications and constant production line tests mean uniformly good ballasts; save lighting dollars by minimizing early replacement and maintenance costs.

Starting with raw steel and copper wire at the receiving dock and ending only when the finished ballast is loaded for shipment, G-E quality control engineers constantly test raw material and ballast parts to meet rigid mechanical and electrical requirements.

By actual count a G-E ballast receives 258 different tests and checks before packing and shipment! This painstaking care pays off to you in highly dependable operation, efficient lamp output, and long ballast life—it saves you valuable lighting dollars.

Next time you specify equipment for a fluorescent lighting installation, make sure you get the best...specify General Electric quality-controlled ballasts.

A G-E ballast tag or sticker on your fixture is proof that it's equipped with the best in ballast value. It's the easy way to be certain. For further information on G-E ballasts, write Section 401-9, General Electric Company, Schenectady 5, New York.

*Miss Fluorescent Ballast, G. E.'s Ballast Mascot

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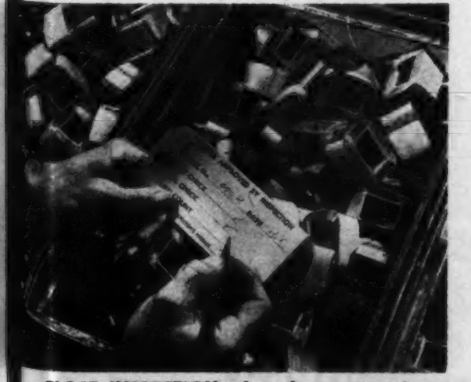

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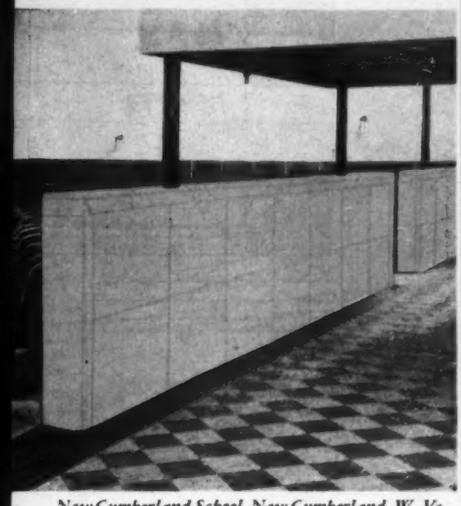

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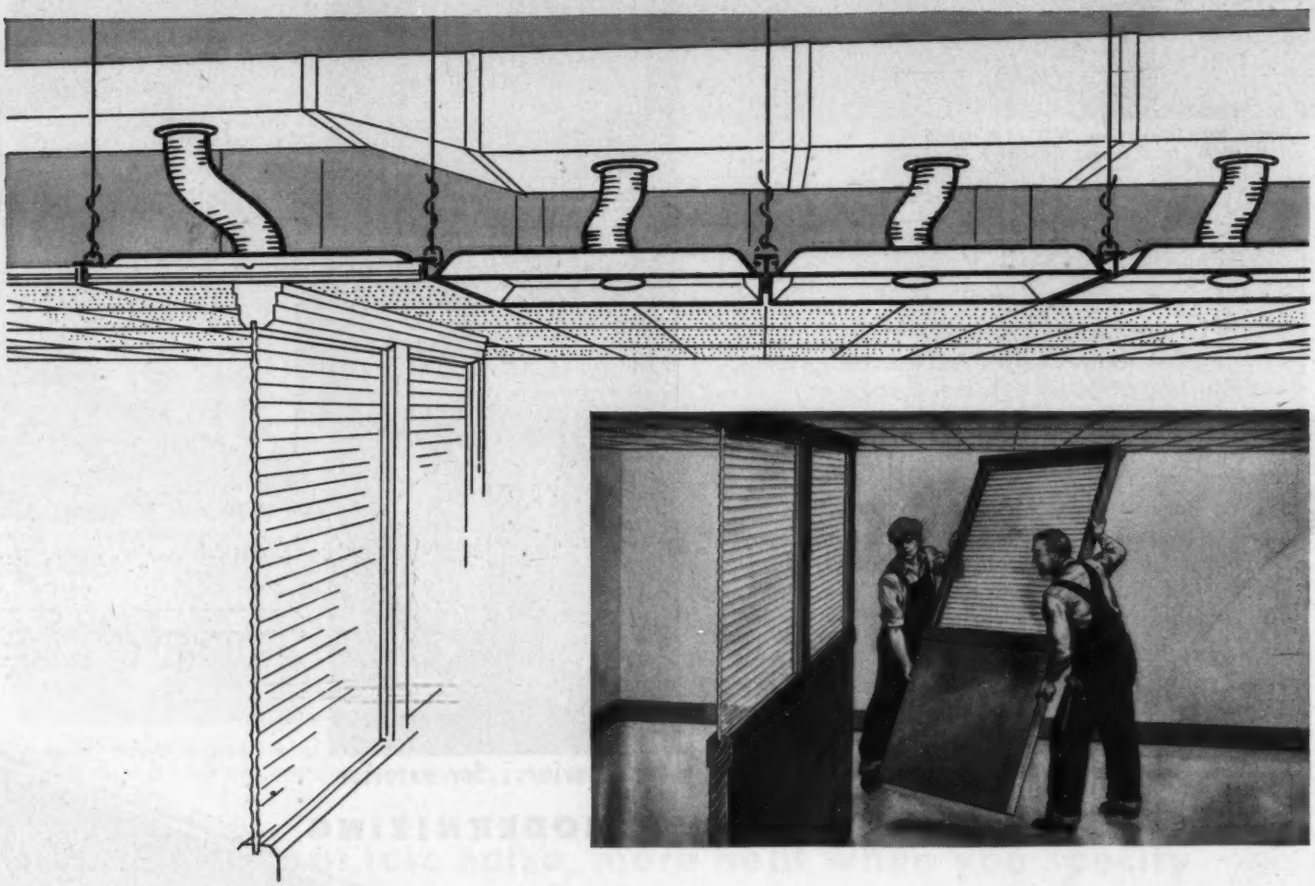

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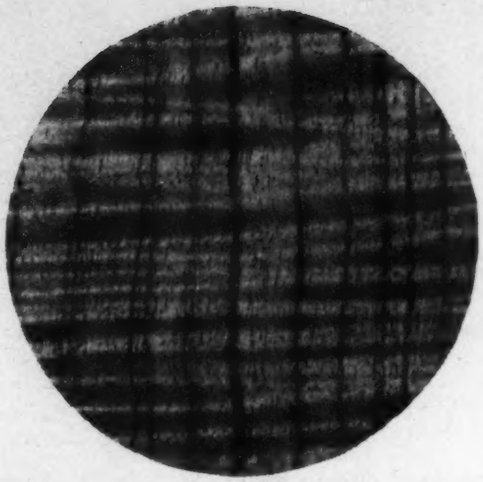

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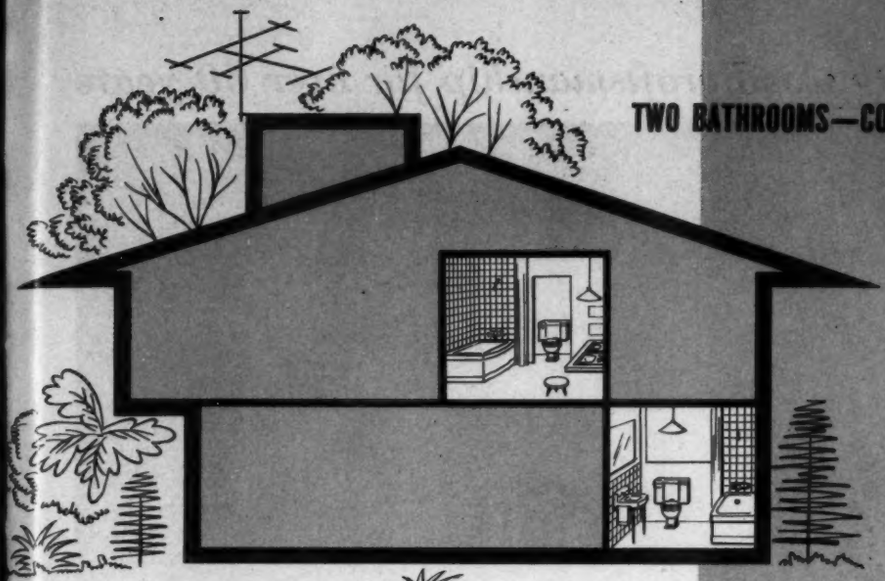
TWO BATHROOMS—COLONIAL STYLE



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Today's living has created the need for two bathrooms, and Beautyware fixtures have made this plan practical in every home. In a colonial residence, you may prefer a bathroom on both floors. You can have them in your choice of five rich, glistening Beautyware colors, or white—in a wide variety of modern contour-styled models—and for much less cost than you may think.

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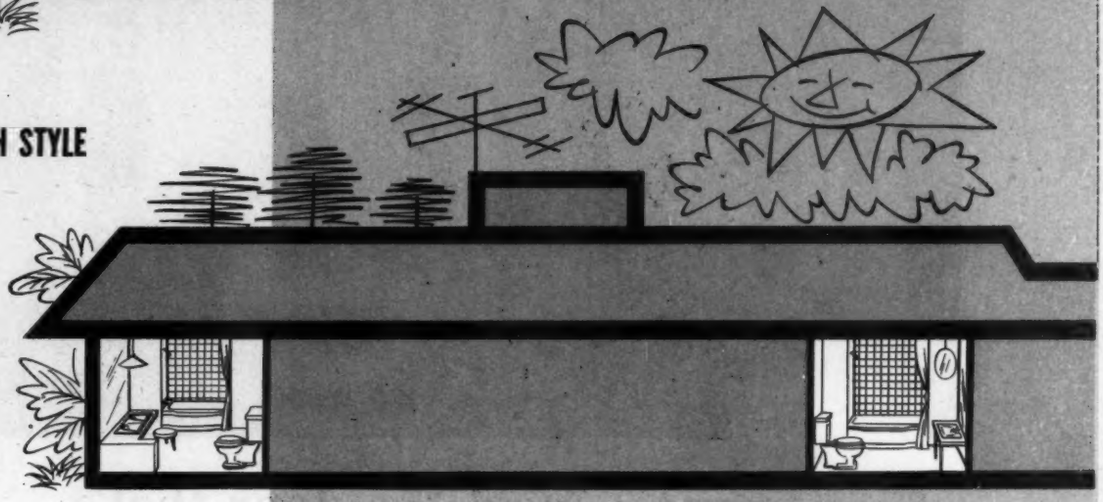

Sky Blue

TWO BATHROOMS—CONTEMPORARY STYLE

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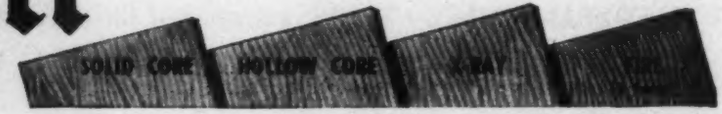

You wouldn't specify old fashioned fixtures . . .

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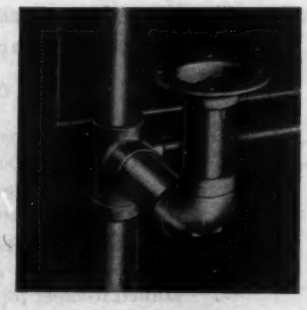

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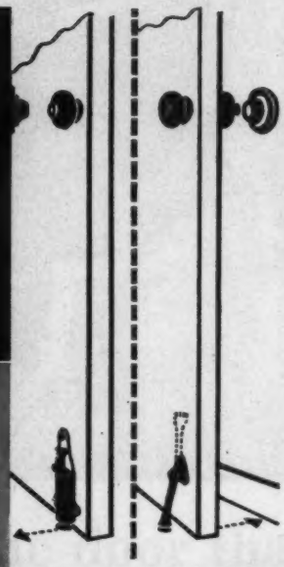

suggestion no. 1:

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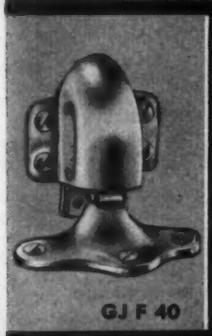

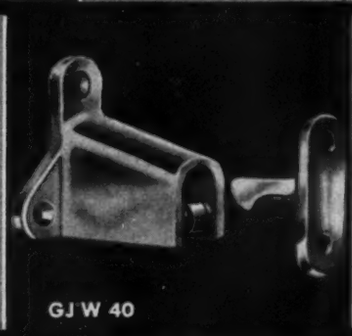

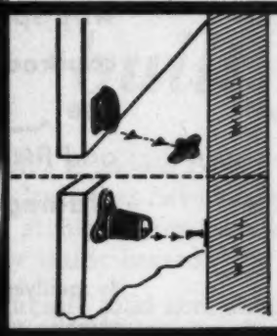

suggestion no. 2:

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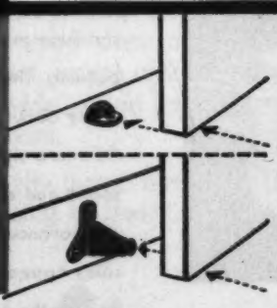

suggestion no. 3:

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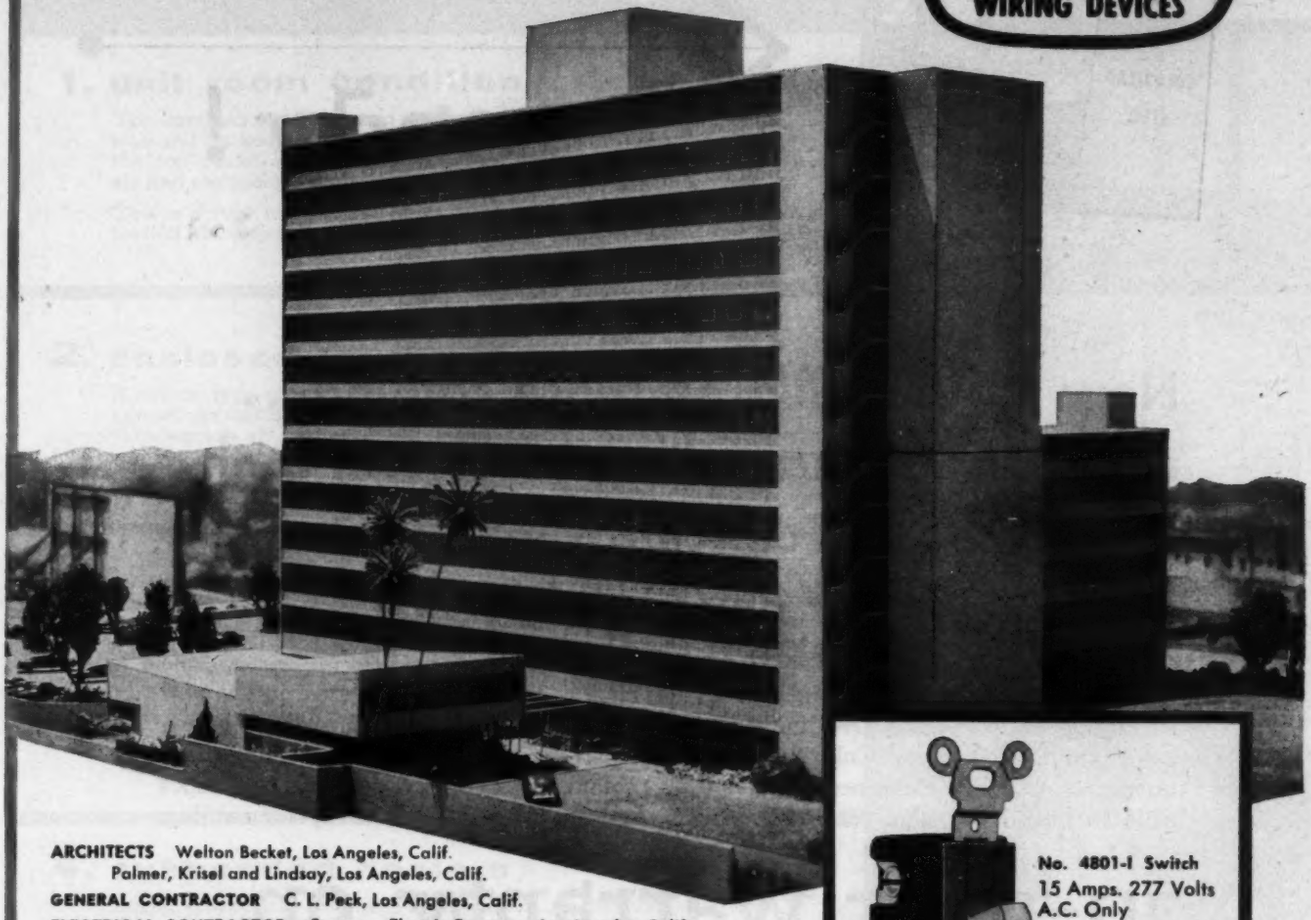

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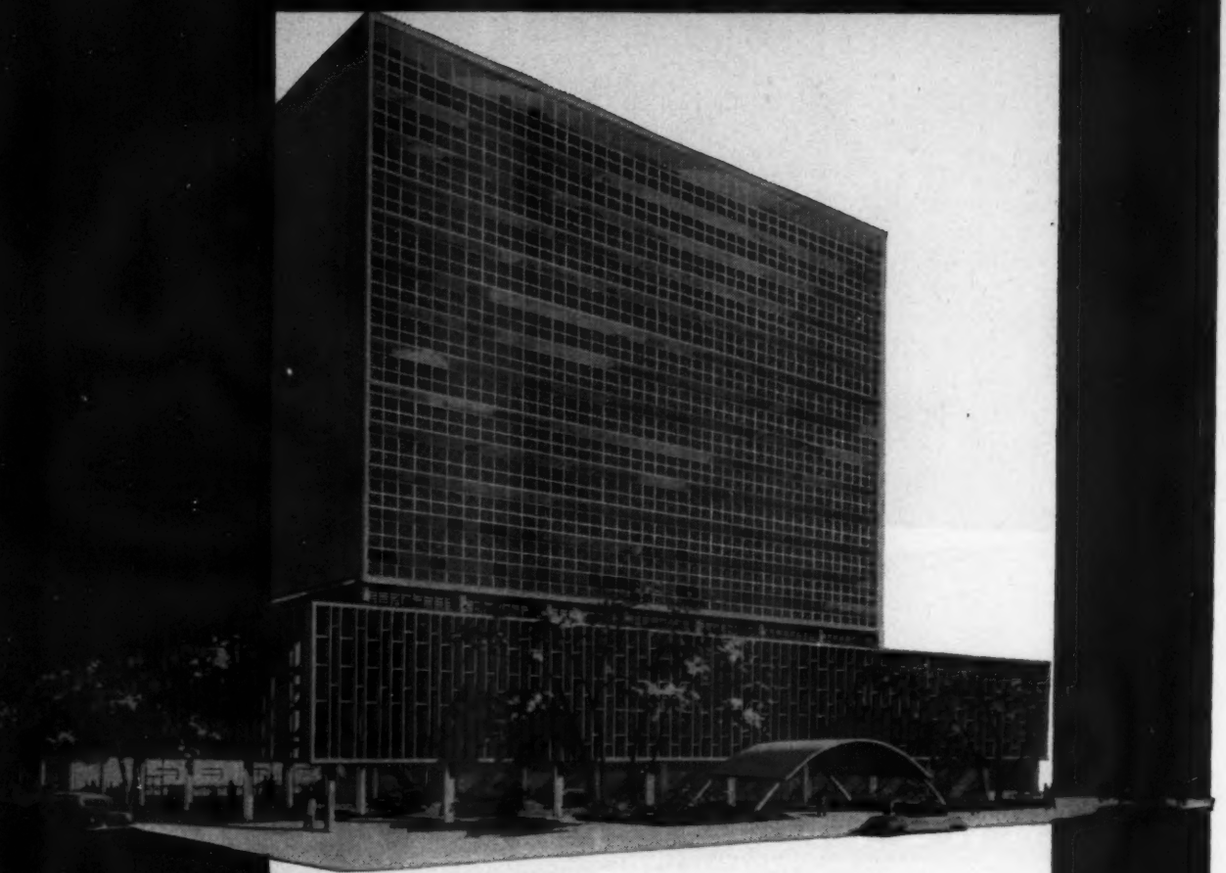

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NOW, YOU CAN SPECIFY A LOWER-COST VINYL WALL BASE

NEW 2½" KENCOVE Vinyl Wall Base costs less to install. Looks smarter, too—especially in modern, low-ceiling rooms.

NEW 2½" KENCOVE has all the advantage of 4" and 6" Kencove Base. It's greaseproof—alkali-proof—with a smooth, easy-to-maintain surface that never needs painting. And it molds easily around corners—will not break, chip, crack or bloom.

Tapered top and coved base assure perfect, dust-tight seal. Corrugated back grips tight over any smooth, dry clean wall not in contact with the earth. Choice of five smart colors:—black, brown, green, gray and sumac red.

America's largest Manufacturer of Resilient Floor Tiles

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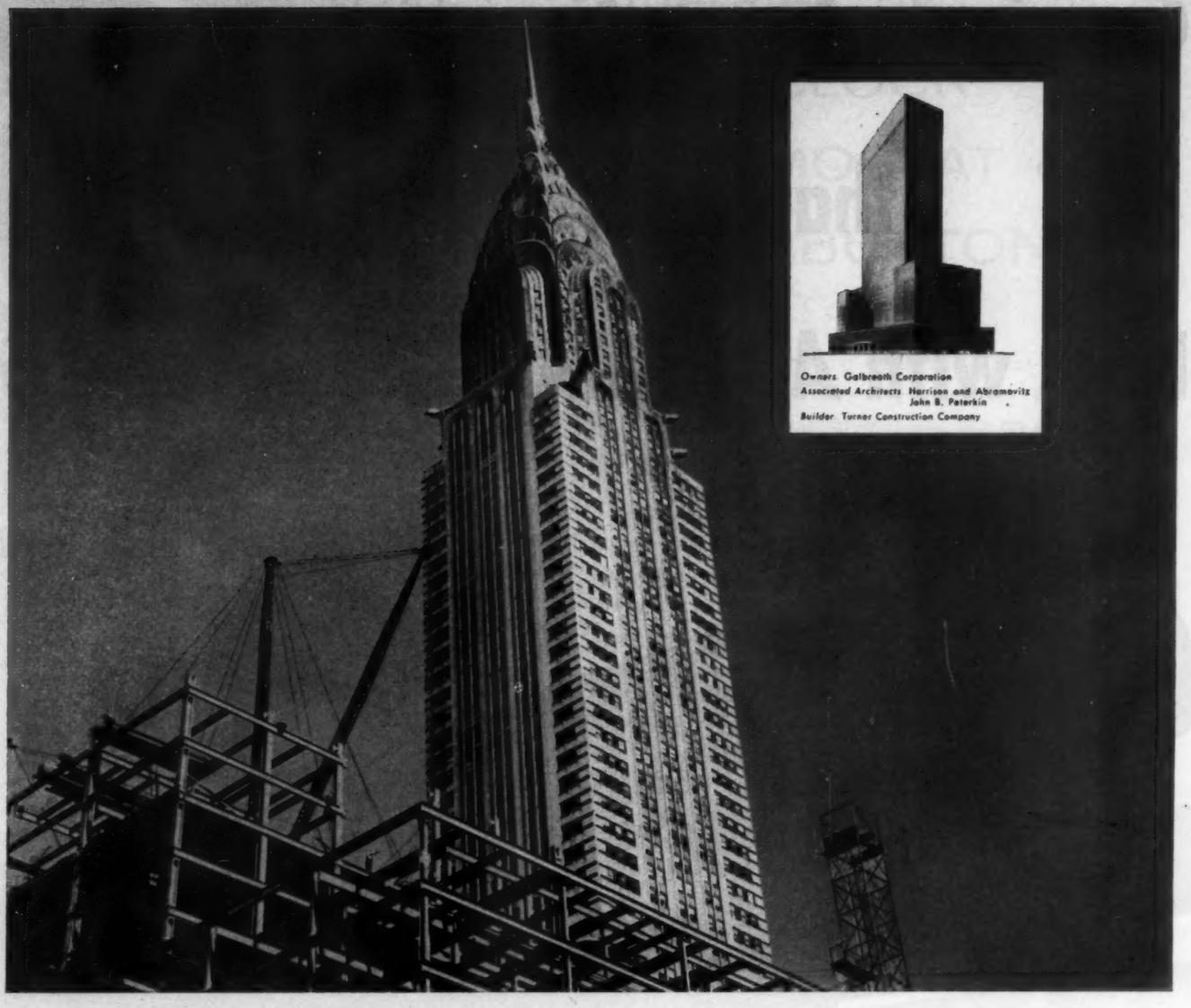

1930 GIANT NEIGHBORS *and* STAINLESS STEEL 1955

- ***the Chrysler Building, with its spire of stainless steel***
- ***the new, stainless-steel-clad Socony Mobil Building***

Here you see the rising skeleton of today's most talked about skyscraper — the new Socony Mobil Building. And just beyond is proof that its stainless steel exterior will serve well and long. It is the famous 1,046 ft. Chrysler Building with its spire of Crucible stainless steel . . . the same type of sheathing that will be used for the 10-acre outer surface of the new 42-story structure.

Stainless steel's permanency against weather and corrosion has been proved again and again by the American Society for Testing Materials. The stainless steel sheet on the Chrysler spire has never been cleaned or repaired. Yet, in periodic tests, the Society invariably finds it is just as sound as when the building was erected over a quarter century ago.

The Socony Mobil Building will be sheathed with .037" stainless sheet, type 302. When completed it will be the largest metal-clad building in the world. Crucible is one of several leading producers supplying the stainless steel for this skyscraper. *Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.*

Write to Crucible, today, for your copy of the 22-page booklet, "A guide to future uses of stainless steel in Architecture and Building."

CRUCIBLE first name in special purpose steels

Crucible Steel Company of America

Carrier absorption refrigeration that cools water with steam

Now with *AUTOMATIC* STOP and GO

100 to 700-ton Capacity

NO OTHER REFRIGERATION MACHINE HAS ALL THESE FEATURES:

Cools water with steam. Low-pressure steam from idle or excess boiler capacity or from central or district mains can be used for cooling at great savings.

Quiet operation—no major moving parts. Small circulating pumps are the only moving parts so that the machine operates without vibration and at extremely low sound level.

No damage from overloads. Inherent nature of the absorption machine is such that it cannot be damaged from improper operation or overloading. Sudden or continuous overloads will merely cause the chilled water temperature to rise.

Complete range of load variation. The only refrigeration equipment that operates efficiently from full load down to zero capacity in a completely automatic cycle with perfectly smooth operating curve.

Flexible and economical installation. Installation is simple and economical in any part of a building. Lighter weight, vibrationless operation and compact size permit location anywhere space and steam are available, from roof to basement.

Completely safe. Machine operates under vacuum, with water as the refrigerant and a simple salt as the absorbent. Nothing could be safer.

Operates by TIME CLOCK THERMOSTAT or PUSH BUTTON

Can you imagine starting up a big 700-ton refrigerating machine without turning any valves or throwing any switches? That's exactly what you can do with this new automatic Carrier Absorption Machine.

The simplest of all refrigerating machines is now completely automatic. All the complexities of start-up and shut-down have been made so simple that a tiny push button, a thermostat or a time clock will control the machine's operation.

Only Carrier makes large absorption refrigerating machines. They cool water with steam. They are efficient, quiet and reliable. And now—with automatic STOP and GO—they are the easiest of all machines to operate.

Eleven standard sizes: You choose the size that fits your needs. Capacities range from 100 to 700 tons of cooling.

WRITE FOR FREE 36-PAGE CATALOG

Find out all the advantages of Carrier absorption refrigeration. Colorful, illustrated booklet includes facts, figures and comments from present users. For your copy, call your nearest Carrier office. Or mail the coupon direct to Carrier Corporation, Syracuse, New York.

Carrier

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CARRIER CORPORATION, 312 S. Geddes Street, Syracuse, New York

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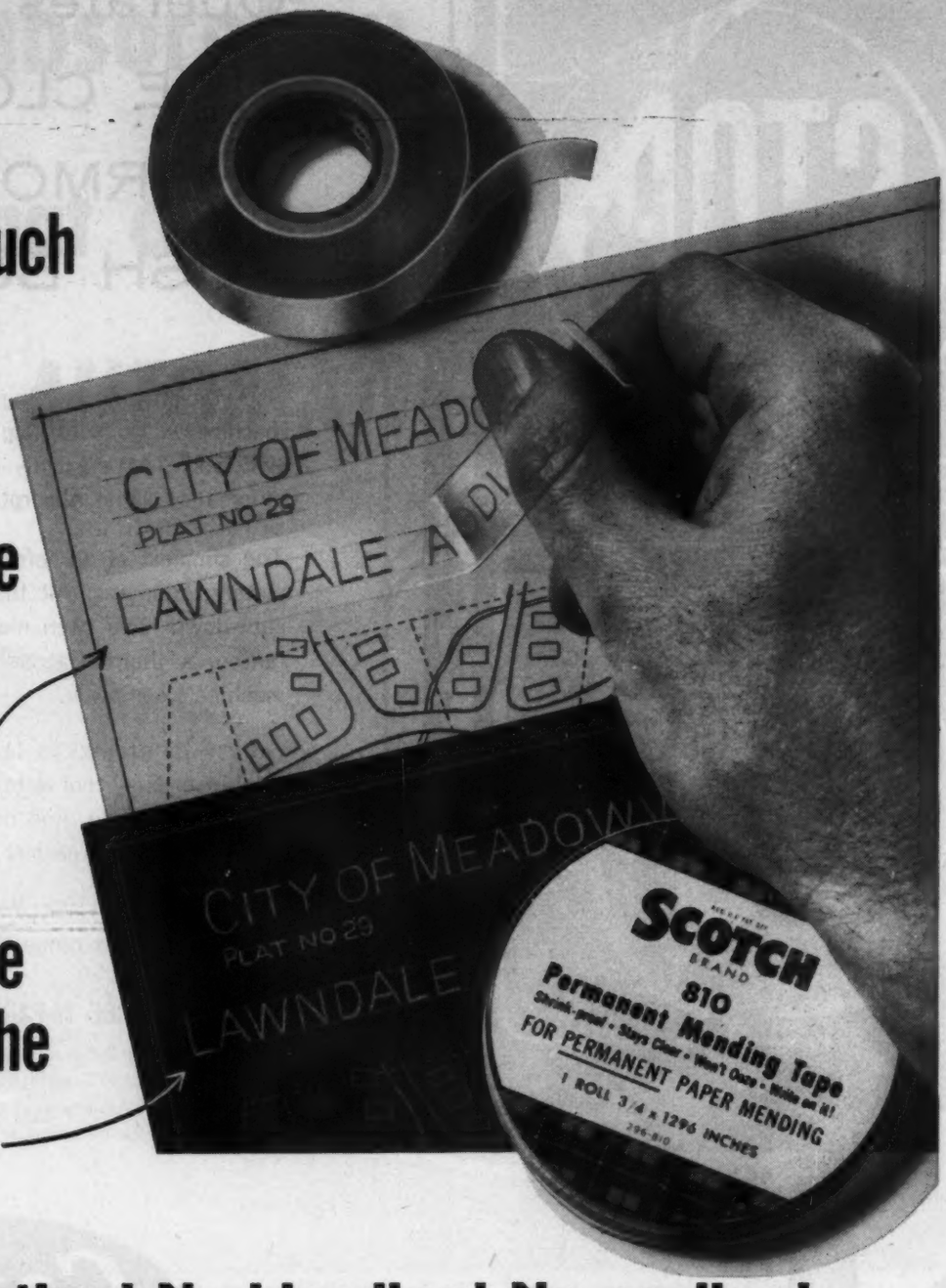
This new stick-at-a-touch tape . . .

lets you make changes on tracings . . .

that can't be detected in the blueprint!



No ghosting! No bleeding! No peeling!

Here's a new way to revise and add to tracings without harming the resultant blueprints. "SCOTCH" 810 Permanent Mending Tape is a new non-ghosting tape that can be written on with pencil, ink or typewriter. It becomes almost invisible on contact with paper, withstands heat and pressure of duplicating machines without peeling or oozing.

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"SCOTCH" 810 will also mend engineering drawings and tracings permanently.

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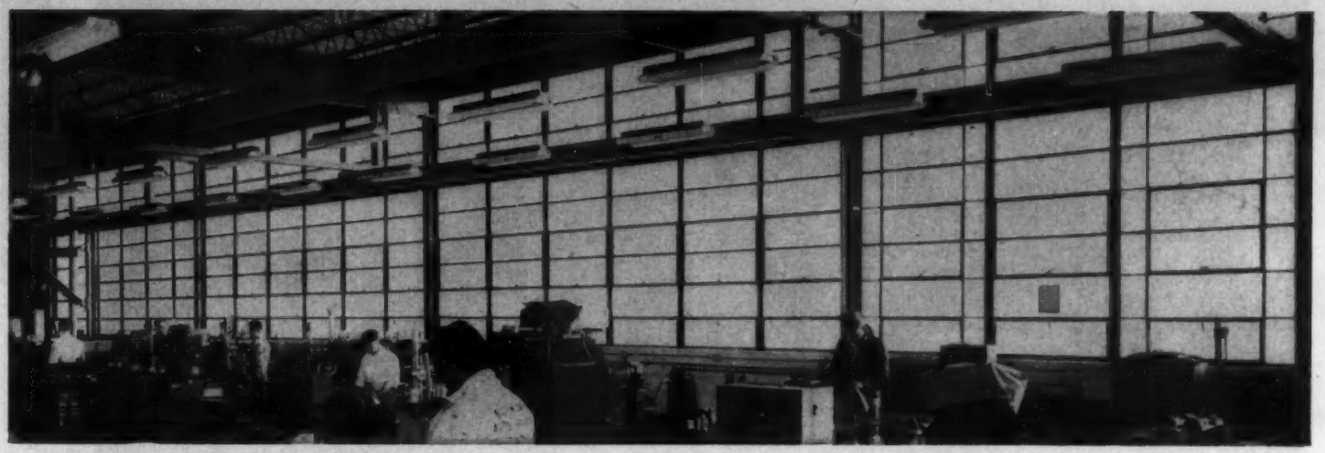
SCOTCH BRAND **810 Permanent Mending Tape**

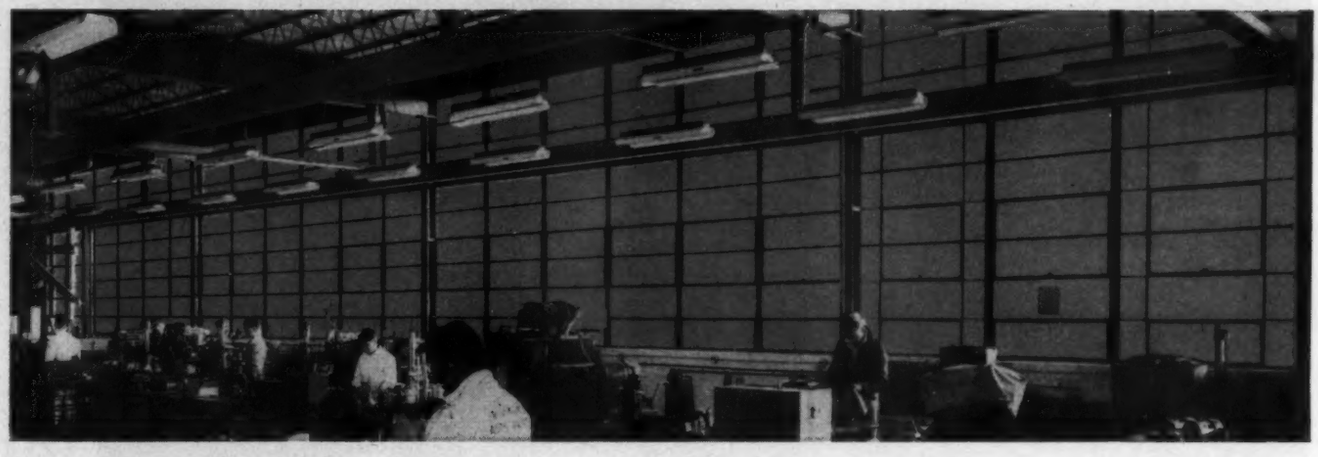
Your tape supplier has it now! See him right away for a trial quantity!

The term "SCOTCH" and the plaid design are registered trademarks for the more than 300 pressure-sensitive adhesive tapes made in U.S.A. by Minnesota Mining and Mfg. Co., St, Paul 6, Minn.—also makers of "SCOTCH" Brand Magnetic Tape, "Underseal" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives. Export Sales Office: 99 Park Avenue, New York 16, N.Y. In Canada: P.O. Box 757, London, Ontario.

Flood a room with daylight . . .



Filtered through Frosted *Aklo*® Glass



. . . finest light for good seeing

Daylight is hard to beat. Eyes were made for it. So, big window walls have become the regular practice wherever good seeing is wanted.

But two drawbacks . . . glare and sun heat . . . sometimes crop up, particularly on south and west walls. And that explains the wide use today of Frosted *Aklo* Glass in so many types of buildings.

It softens and diffuses transmitted daylight, reducing glare of direct sun, bright sky and dazzling reflections. Its subdued blue-green color is restful to the eyes.

Aklo Glass reduces solar heat. It absorbs sun heat as the light passes through, reradiating much of it back outdoors. *Aklo* Glass in ¼" thickness shuts out as much as 44% of the sun's radiant energy. Its blue-green color even makes you feel cooler.

So, there's eye comfort and body comfort in using *Aklo* Glass. It pays off in better workmanship, better employe relations and reduced air-conditioning costs.

PHONE FOR THIS TEST

A call will bring a radiometer demonstration kit to your desk. It shows you how *Aklo* Glass reduces glare and sun heat. Call your L·O·F Glass Distributor or Dealer listed under "Glass" in the yellow pages of your phone book. Or write to Libbey·Owens·Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio.

AKLO GLASS **FILTERS DAYLIGHT**

BLUE RIDGE GLASS

made by Blue Ridge Glass Corp.

L·O·F GLASS

sold by Libbey-Owens-Ford Glass Distributors

SCOPE

Yale 5300 series of cylindrical locksets

VARIETY AND VERSATILITY
TO GIVE YOU UNFETTERED
DESIGN FREEDOM AND BEAUTY

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Eight new escutcheons that combine with four new knobs . . . two new entrance handles . . . two new lever handles: 1. Troy with Norfolk escutcheon. 2. Deauville lever handle. 3. Guilford lever handle. 4. Troy with Madison escutcheon. 5. Litchfield with Savoy escutcheon. 6. Classic with Dallas escutcheon. 7. Nassau with Newport escutcheon. 8. Litchfield with Williamsburg escutcheon. 9. Nassau with Constellation escutcheon. 10. Litchfield knob. 11. Troy knob. 12. Classic knob. 13. Nassau knob. 14. Arlington entrance handle. 15. Westbrook entrance handle.

THE YALE & TOWNE MFG. CO., LOCK & HARDWARE DIV., WHITE PLAINS, N.Y.

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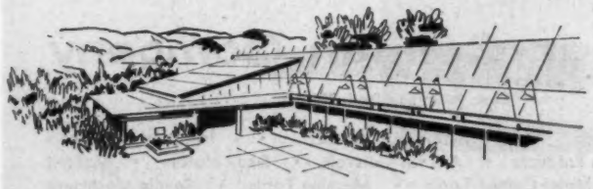
Corrulux®

SOLVES A PROBLEM FOR FRANK LLOYD WRIGHT



For uniform, effective, and dramatic daylighting of his famous exhibition "Sixty Years of Living Architecture," Mr. Wright chose lightweight, shatterproof roof panels of translucent Corrulux Maxlite.

For your own exacting daylighting requirements, investigate this new building material. Corrulux in thousands of installations has proved superior in performance and practical from the point of view of construction costs.

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BARBER COLMAN

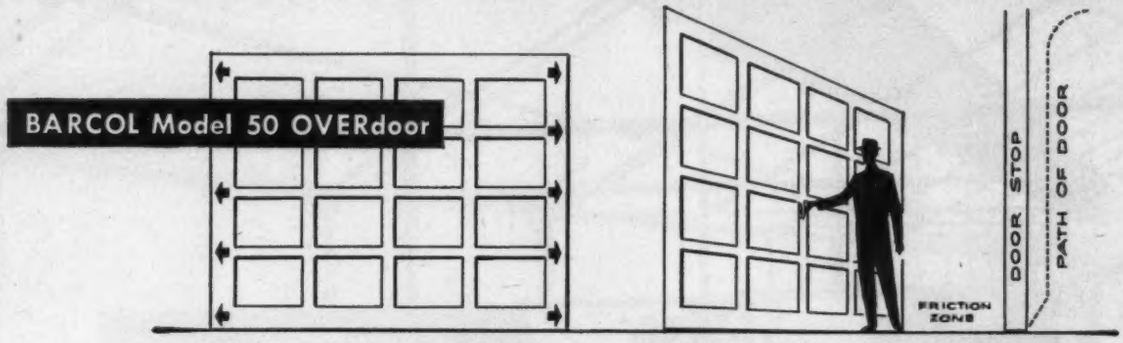
Barcol® OVERdoors

close tighter, yet open easier!

Barcol CAM ACTION OVERdoors close tighter because door rolls easily down with ⅜" clearance and then is pushed forward by cam levers and held firmly and evenly against door stops. No wedging . . . no dragging . . . no scraping.

Barcol CAM ACTION OVERdoors open easier, at a turn of the latch handle, because *extra* Cam Springs at bottom pull entire door ⅜" *back* from stops—overhead springs then lift friction-free door upward. Friction zone (see below) is reduced to a minimum, allowing wood to swell in damp weather without sticking, binding, or wedging.

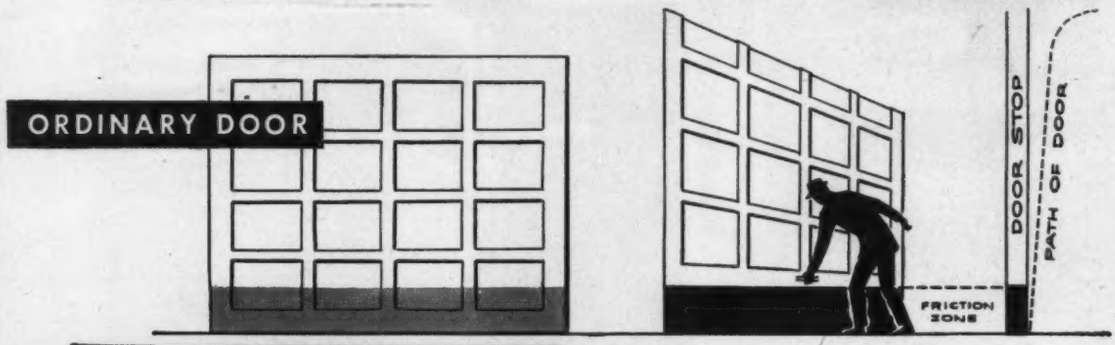
THE IMPROVED OVERHEAD DOOR . . . CAM ACTION'S THE REASON!

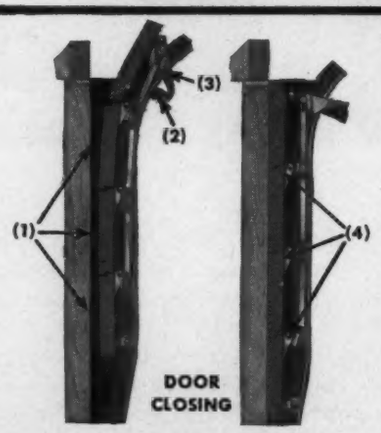


CLOSING: Door *first* closes free of stops; *then* cam levers press door against stops.

OPENING: Cam levers immediately free entire door from stops; friction zone is less than 1 inch!

No dragging or wedging to close weather-tight and rattle-proof. No stooping, no pulling through *long* friction zone to open.





SEE HOW CAM ACTION WORKS!

(1) Uniform ⅜" clearance assures all-weather friction-free opening and closing. Stop (2) engages cam lever (3) linked to other cam levers (4) pushing all door sections simultaneously against stop strips.

Only Barber-Colman OVERdoors give you all three—

CAM ACTION releases immediately for easy opening even when door swells—yet closes weather-tight and rattle-proof even when door shrinks.

WEATHER-KING PANELS—guaranteed for life not to weathercheck, split, crack, or delaminate.

INDIVIDUALIZED DESIGN—new *Doornaments* make standard doors into custom designs at only fractional extra cost. For free design service, call your Barber-Colman distributor (under "Doors" in phone book), or write:

Barber-Colman Company

Dept. P510, Rockford, Illinois

WARDROBEdoors • Automatic Controls • Industrial Instruments
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WHO makes the RLM units I need?

With the recent revisions in RLM Standards for Industrial Lighting Units, featuring new upward-component fluorescent units, it is more important than ever that you know *who* makes units which conform to these newly-established and recently-revised specifications. This chart gives you the up-to-the-minute answer. It is based on the latest report of the Electrical Testing Laboratories who continually check conformance to RLM Standards. For a complete set of RLM incandescent and fluorescent specifications, as well as the addresses of RLM Manufacturers, send for a complimentary copy of the 1955 RLM Specifications Book.

RLM Standards Institute. Suite 827, 326 W. Madison Street, Chicago 6, Illinois.

HERE is your up-to-the-minute ANSWER!

These are the MANUFACTURERS who offer RLM-LABELED UNITS

INCANDESCENT RLM SPECIFICATIONS							FLUORESCENT RLM SPECIFICATIONS											
#1	#2	#3	#4	#18	#40	*						TD-1		TD-2	TD-3	D-1	D-2	D-3	SD-1
100-1000w Dome	100-1000w Deep Bowl	500 & 1000w Sym. Angle	200-1000w High Bay	500 & 1000w Glassteel Diffuser	200-1000w High Bay		2-40w & 2-38w	2-75w	3-40w	3-75w	2-90w & 2-40w T17	2-40w & 2-38w	2-75w	3-40w	3-75w	2-90w & 2-40w T17	2-40w	2-75w	
5		1		2	2		ABOLITE REFLECTOR DIV.												
4	5	2		2			APPLETON ELECTRIC CO.												
5	4	4		3			BENJAMIN ELECTRIC MFG. CO.	OC	OC	OC	OC	OC	OC	OC	OC	OC		C	C
							DAY-BRITE LIGHTING, INC.						O	O	O	O	O	O	O
							EASTERN FIXTURE CO., INC.	O	O	O		O							
2	4	2					ELECTRO SILV-A-KING CORP.	OC	O	OC	O	OC						O	O
							ENDER-MONARCH CORP.	O		O									C
							FLUORESCENT FIXTURES OF CALIF.	OC	O	OC	O		O	O	O	O		C	OC
							GLOBE LIGHTING PRODUCTS, INC.	OC	O	OC	O		OC	OC	OC	OC		O	O
							THE EDWIN F. GUTH CO.	O	O	O	O	O							
							KEYSTONE ELECTRIC MFG. CO.	OC	O	OC	O		O						
							LEADLIGHT FIXTURE CO.	OC	O	OC	O		O	O	O	O			
5			2	2			THE MILLER CO.	OC	O	OC	O	OC	O	O		O			
							MITCHELL MFG. CO.	O		O		O							•
4			2	2	2		MULTI ELECTRIC MFG., INC.												
5	4	4					OVERBAGH & AYRES MFG. CO.												
5	4	4	2	2			QUADRANGLE MFG. CO.												
							THE RUBY LIGHTING CORP.	O	O	O	O								
							RUBY-PHILITE CORP.	OC	O	OC	O	O							
							SMITHCRAFT LIGHTING DIV.	OC	O	OC		O	O	O	O	O			
5	4	5		3			SMOOT-HOLMAN CO.	OC	O	OC	O	O	O	O	O	O		O	O
4		1					SPERO ELECTRIC CORP.												
							SUNBEAM LIGHTING CO.	O	O	O	O								
							SYLVANIA ELECTRIC PRODUCTS, INC.	OC	O	OC	O	OC	OC	O	OC	O	OC	O	O
4	2	4		1			WESTINGHOUSE ELECTRIC CORP.	OC	O	OC		O					O	O	
5	4	2					WHEELER REFLECTOR CO.	OC	O	OC	O	OC	OC	O	OC	O	OC	C	C
							WORK-O-LITE CO.	O	O	O	O	O							
							ZANE MFG. CO.	O	O	O	O								

* Aluminum Reflectors all others are Porcelain Enamel

TD-1, 2, 3 – without uplight

D-1, 2, 3 – 5–15% uplight

SD-1 – 20-30% uplight

O = Open End

C = Closed End

Note: Many manufacturers make incandescent RLM Units for more than one lamp size. The numerals refer to the number of different-size RLM Units which the manufacturer offers under the specification.

MANUFACTURER'S NAME

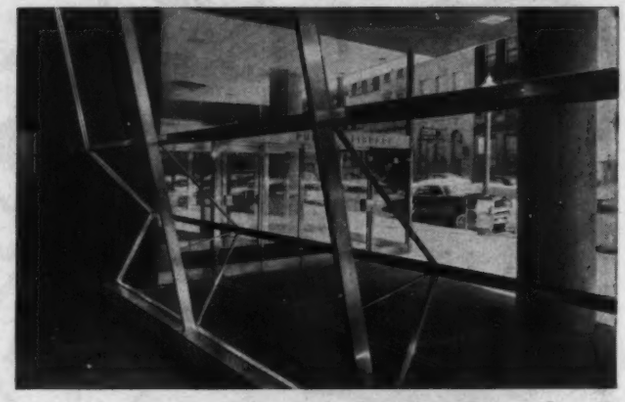
COMPLIANCE WITH SPECIFICATIONS AND COVERED INSTRUCTIONS FOR RLM STANDARDS ELECTRICAL TESTING LABORATORIES, INC.

RLM STANDARDS INSTITUTE INCORPORATED

The letters RLM stand for Reflector and Lighting Equipment Manufacturers

R 1143

Stainless sash and mullions support non-reflecting windows



Windows fronting the first-floor browsing room of Cincinnati's new Public Library give through-vision under practically any kind of natural or artificial light.

The non-reflecting library windows from the inside. Note the continuous, stainless-covered mullions and stainless tubular struts supporting stainless sash.

Architects:
Woodie Garber & Associates and
Samuel Hannaford & Sons
Associated Architects,
Cincinnati

The new Cincinnati Main Library is designed to "sell" reading to the public through effective display of books. The casual passerby can see clearly into the comfortable browsing room and attractive book display room adjacent to the sidewalk. This is because of a large non-reflective window that makes through-vision possible under practically any condition of natural or artificial light.

All supporting members of this multiple-angle window are made of Armco Stainless Steel, as are mullions, sash, sills and heads of windows throughout the building. Entrance details, outside doors and door frames are of stainless steel, too.

On the interior, conveyor doors, dumb waiter doors and cabs, elevator doors and cabs, vacuum tube stations, hand rails, mail box doors, book return door and all convector covers also are of stainless steel. One subcontractor alone used 20,000 pounds of stainless steel in this building.

Stainless steel will serve this model library building economically. Exterior applications will resist the weather, never require painting and need little maintenance. On the interior, stainless steel will stand up under wear and tear because of its great strength—remain new-looking indefinitely.

For information on how to specify Armco Stainless Steels in Architectural applications, write us at the address below or phone the nearest sales office.

ARMCO®

ARMCO STEEL CORPORATION 1505 CURTIS ST., MIDDLETOWN, OHIO

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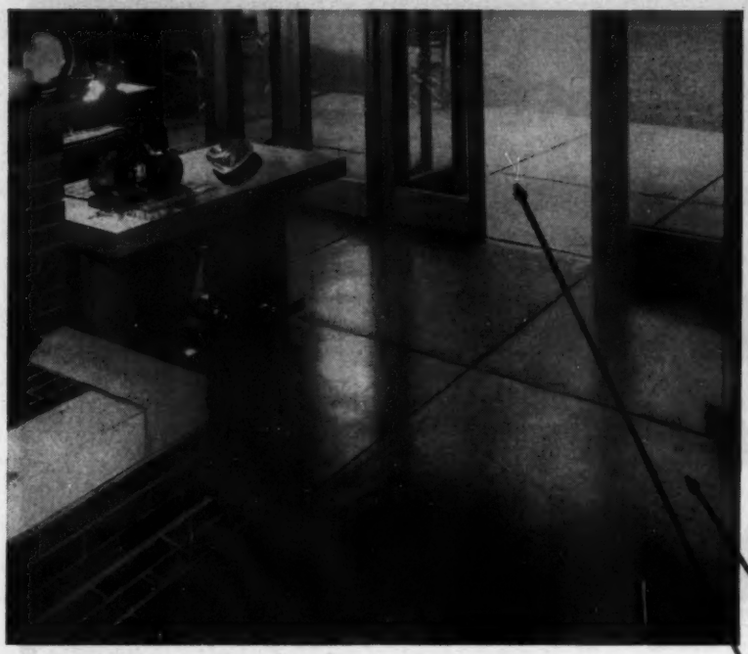
SHEFFIELD STEEL DIVISION • ARMCO DRAINAGE & METAL PRODUCTS, INC. • THE ARMCO INTERNATIONAL CORPORATION

Home of Mrs. I. Zimmerman, Manchester, N. H.
Designed by Frank Lloyd Wright



From the first rough sketches . . .

Frank Lloyd Wright specified Colorundum floors for their warmth of color and beauty."

Mrs. I. Zimmerman, Manchester, N. H.

"Look at these photographs of our exciting new home and you can see why we just wouldn't consider drab, colorless concrete. From the first rough sketches," writes Mrs. Zimmerman, "we planned attractive, luxurious Colorundum for the patio and the service areas . . . especially when we found out how little it cost!"

Colorundum is the ideal solution to the problem of exposed or uncarpeted areas of plain concrete. It provides colorful, wear-resistant floors at just a fraction of the cost of tile.

Colorundum is far more resistant to traffic than ordinary concrete floors. It is a balanced formulation of nonslip aggregate (next to the diamond in hardness), water-repellent compounds, and durable colors . . . contains no silica, quartz, metal or sand. It is easy to keep clean, and since it contains no metal, it will not rust or stain.

Colorundum is available in eleven decorator colors.

Fused color. Not a paint or coating! Colorundum is troweled into the concrete topping and becomes an integral part of the surface, producing beauty and durability.

A Subsidiary of *Chemical Corporation*

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Firm Name_____

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HORN • **HUDSON** • **WILLEY** (paints, maintenance and construction materials, industrial coatings) • **WARWICK** (textile and industrial chemicals) • **WARWICK WAX** (refiners of specialty waxes) • **RUTHERFORD** (lithographic equipment) • **SUN SUPPLY** (lithographic supplies) • **GENERAL PRINTING INK** (Sigmund Ullman • Fuchs & Lang • Eagle • American • Kelly • Chemical Color & Supply Inks) • **MORRILL** (news inks) • and **ELECTRO-TECHNICAL PRODUCTS** (coatings and plastics)

more than 9000 schools daylighted with

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Wascolite Skydomes — the first prefabricated plastic skylights — have helped change the design of the American classroom. Handsome, trouble-free and inexpensive, they bring even, balanced daylight to every desk, and to every part of the building — in more than 9000 schools across the nation!

Now Wasco engineering has developed a complete line of toplighting units that provide daylighting plus — ventilation, fire-venting, added insulation and access to the roof. Incorporated into a toplighted school, these exclusive Wascolite products provide important extra functions at practically no extra cost. For complete details, see Sweet's Catalog or write Dept. AR10.

Patent No. 2610593, 2693156 and pats. pending

WASCOLITE PYRODOME—Daylighting plus fire-venting! Provides greater safety by opening automatically in case of fire. Permits heat, smoke and toxic fumes to escape and helps control spread of fire.

WASCO PRODUCTS, INC.

Bay State Road, Cambridge 38, Mass.

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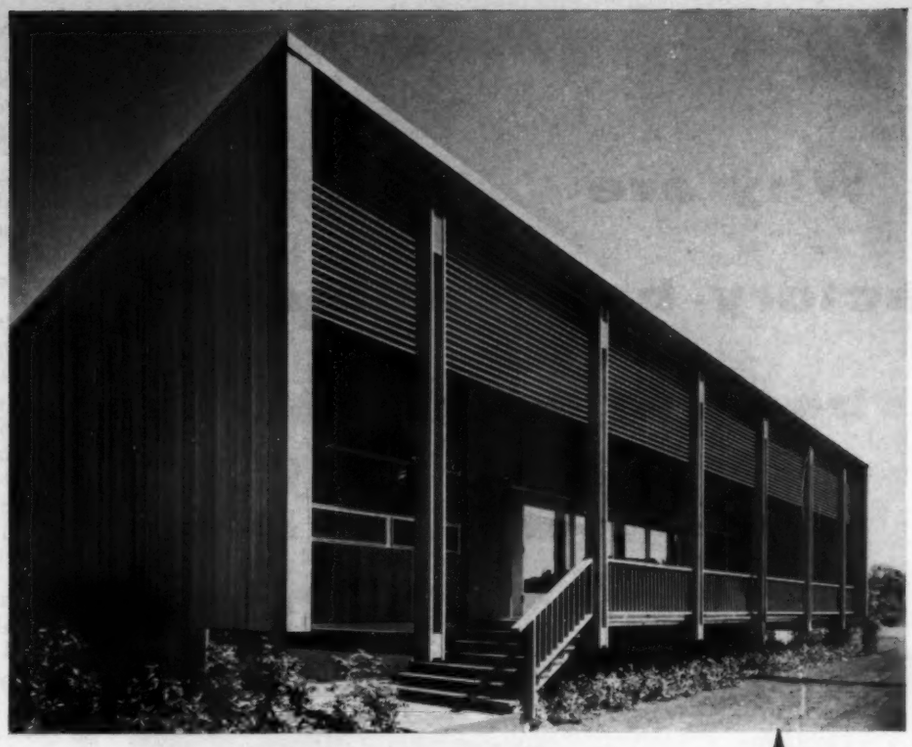
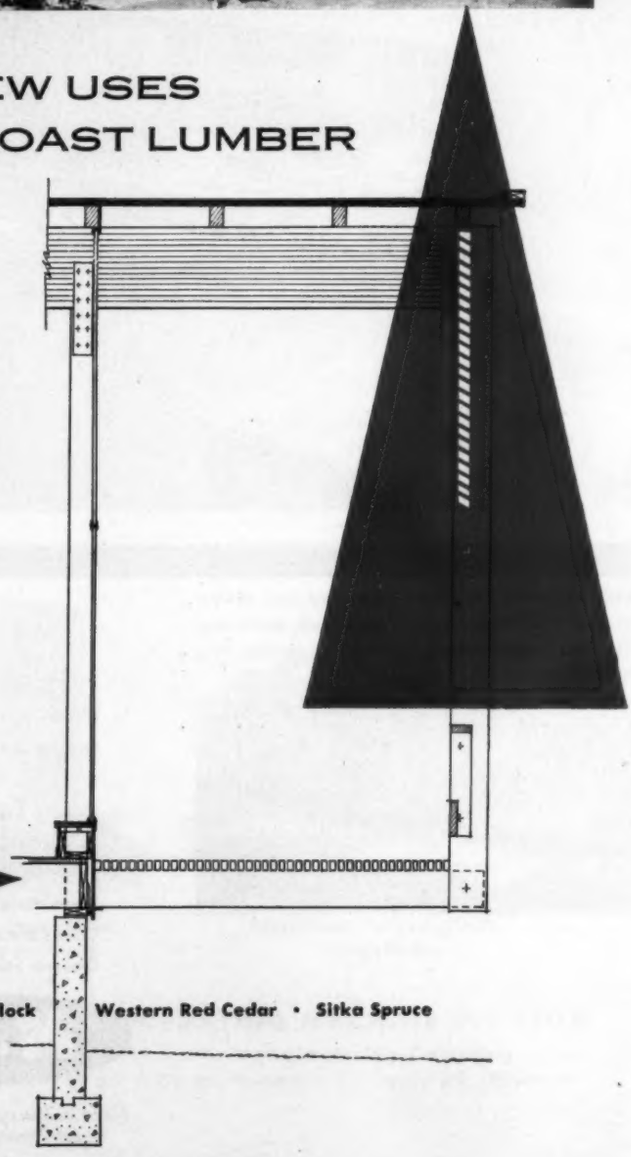


Tucker-Maxon Oral School designed by the office of Belluschi and Skidmore, Owings & Merrill. Another outstanding example of the use of wood in modern architectural designs produced by this firm.

THERE ARE ALWAYS NEW USES FOR WEST COAST LUMBER

Contrasts of vertical and horizontal patterns make this modern application of wood especially dramatic. The attractive and practical suspended porch takes advantage of cantilevered beams and joists. Louvres shield the building's interior from direct sun and add to the open feeling of a covered access area.

For freedom of expression, specify wood... the economical, ever-modern building material. Specify West Coast species by name... Douglas Fir, West Coast Hemlock, Western Red Cedar and Sitka Spruce.



WEST COAST LUMBER

Douglas Fir • West Coast Hemlock • Western Red Cedar • Sitka Spruce

Send for folder describing free literature available for your reference files.
West Coast Lumbermen's Assn., 1410 S. W. Morrison St., Portland 5, Ore.

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Finest in domestic and institutional cabinetwork since 1893!

To be sure, cabinets can sometimes be built on the job for lower initial cost. But school records prove that they are far more expensive in the long run.

Schools that install Mutschler factory-built cabinetwork report it is so well built, so durable they consider it as non-depreciative as the building itself. On-the-job cabinetwork just cannot measure up to this kind of quality.

From trees felled on company-owned tracts to installed cabinetwork, Mutschler factory-built cabinets are under the careful supervision of skilled craftsmen. And more than a million dollars worth of specialized machinery is used in their fabrication. No contractor or carpenter has the time, nor the equipment, to build homemaking cabinets that give service like those made by Mutschler.

Then there is the matter of finishes. All Mutschler natural-grain cabinetwork is finished with DuPont *Dulux* . . . which cures by chemical reaction in the presence of heat and a chemical catalyst. It is extremely scratch-resistant, and is unharmed by nearly any solvent or solution. This kind of finish cannot be properly applied without factory equipment.

Also, cabinetwork should be planned for most efficient use. Mutschler sales engineers are specialists in the planning and equipping of school homemaking and foods departments, arts and crafts rooms, and storage areas. This planning help is available at no extra cost when you specify Mutschler.

Such a great number of the nation's schools have found they get more for their money with Mutschler. Why not investigate comparative costs and services before you build or remodel? Call or write your nearest sales office below.

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RAY S. SNYDER COMPANY—New York 17, N.Y.; Conn., Mass., R.I., New Jersey (North)
CARBEAU, INC.—Boston, Mass.; Maine, Vermont, New Hampshire
W. S. BALLOU—Massapequa, L.I., New York; New York City, Long Island
SCHOOL EQUIPMENT, INC.—Syracuse 2, N.Y.; New York State
AMERICAN SEATING CO.—Philadelphia 30, Pa.; Pennsylvania, New Jersey (South), Delaware

SOUTHEAST and SOUTH
SOUTHERN DESK COMPANY—Hickory, N. Carolina; Maryland, West Virginia, Virginia, North Carolina, Tennessee, Mississippi
AMERICAN SEATING CO.—Atlanta 2, Georgia; South Carolina, Georgia, Alabama, Florida
ALL STATE SUPPLY COMPANY—Little Rock, Arkansas; Arkansas

NORTH CENTRAL
HALDEMAN-HOMME—St. Paul 14, Minnesota; Minnesota
V. A. STUMP—Middleton, Wisconsin; Wisconsin
P. O. WILKIN—Dearborn, Michigan; Michigan
J. S. LATTA AND SON—Cedar Falls, Iowa; Iowa
L. P. REIGER COMPANY—Bellwood, Illinois; Illinois
BURNS SALES COMPANY—Indianapolis 8, Indiana; Indiana
KYSER SALES COMPANY—Warren, Ohio; Ohio

CENTRAL
HOOVER BROTHERS—Kansas City 6, Missouri; Nebraska, Kansas, Missouri (Western)
CENTRAL SCHOOL SUPPLY CO.—Louisville, Kentucky; Kentucky
LEN A. MAUNE CO.—St. Louis 17, Mo.; Missouri (Eastern)

SOUTHWEST
W. C. HIXSON COMPANY—Dallas 2, Texas; Louisiana, Oklahoma, Texas, New Mexico
PBSW SUPPLY COMPANY Phoenix, Arizona; Arizona

WEST
AMERICAN SCHOOL SUPPLY CO.—Denver 2, Colo.; Colorado, Wyoming (Eastern)
HULL EQUIPMENT COMPANY—Salt Lake City 3, Utah; Nevada, Idaho, Wyoming (Western), Montana
AMERICAN SEATING CO.—Los Angeles 3, California; California (Southern)
AMERICAN SEATING CO.—San Francisco 24, California; California (Northern)

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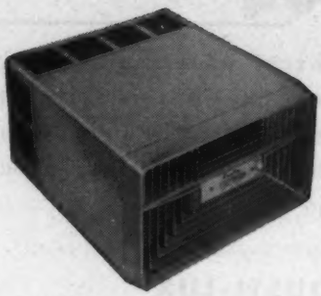
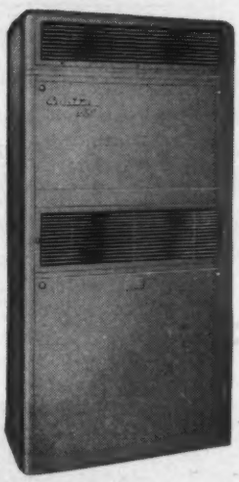
MUTSCHLER BROTHERS CO.—Nappanee, Indiana; Oregon, Washington, North Dakota, South Dakota, Illinois (Southern)
TOM DEWEY & COMPANY—Lanikai, Hawaii; Hawaiian Islands

Our 101st Year of Successful Manufacturing Experience



NEW Attractive Window Units up to 1½ tons for commercial and residential use



Package Units—2, 3, 5, 7½ and 10 tons. Choice of Open or Semi-hermetic Compressors . . . and 15 ton packaged central type units.

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AIR CONDITIONING

Units Are Your Assurance of Client Satisfaction

The Curtis line is precision-built to assure a long life of trouble-free service. You can specify Curtis air conditioning equipment with the assurance that it will never let you down.

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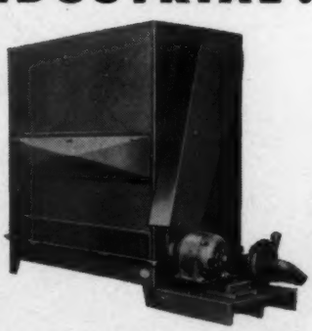
- ✓ **Smooth, quiet operation.**
- ✓ **A Curtis Unit for every job— a complete range of sizes and types.**

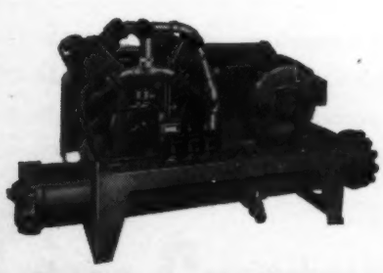
See Curtis data in Sweets Catalog File, and write for your free copy of NEW *Curtis* Architects' Air Conditioning Manual.

RESIDENTIAL . . . INDUSTRIAL . . . COMMERCIAL

Residential Cooling and Heating Units



Air handling units, cooling towers, and evaporative condensers



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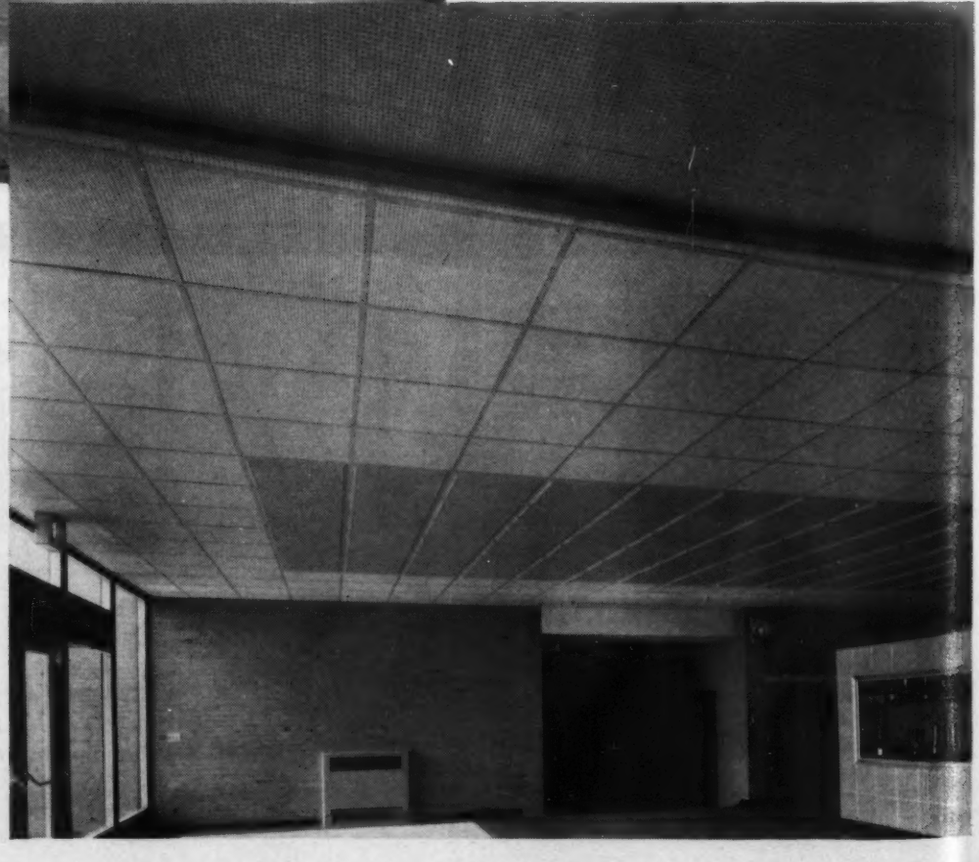
LUMICEL

A 24" x 24" white translucent single panel. The basic material is vinyl plastic, providing an effective balance between the transmission and diffusion of light emanating from a totally separate lighting fixture.

ACOUSTI-LUX

A 24" x 24" white translucent double panel fabricated of two formed units of the basic material, secured together around perimeter. A specific volume of air is contained between the two faces; diaphragmatic damping provides the sound absorption value.



Melvindale High School
Melvindale, Michigan

New Acousti-Celotex *lumicel* and *acousti-lux*

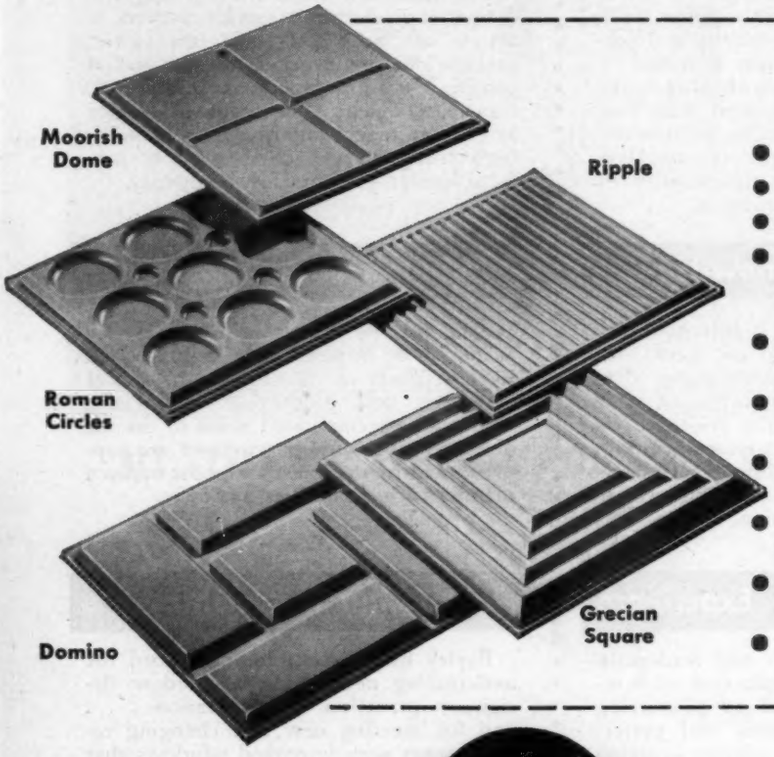
TRADE MARK TRADE MARK

panels for translucent ceilings

Two new, highly decorative answers to today's high-level illumination demands: Acousti-Celotex LUMICEL and ACOUSTI-LUX (Patents No. 2218992, 2710335)...for scientifically correct balance between peak light transmission and uniform light diffusion.

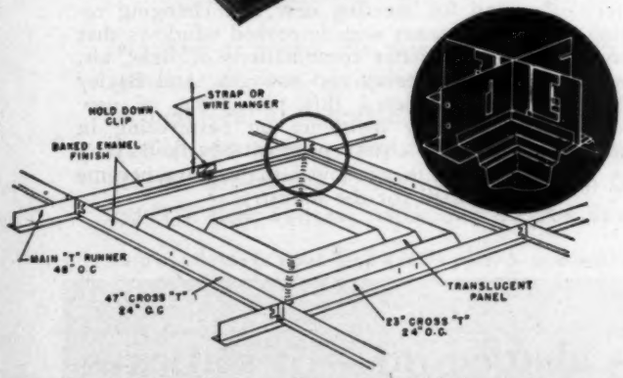
Installed on Alumitee metal suspension system, directly from the base ceiling, completely independent of light fixtures. May be used in combination with choice of attractive Acousti-Celotex sound conditioning tile in translucent ceiling designs, depending upon lighting, acoustical, and decorative requirements.

LUMICEL and ACOUSTI-LUX panels are now available at your Acousti-Celotex Distributor. Contact him now. See sample panels—get installation details!



DESIGNED TO HELP SOLVE
Today's Illumination Problems with . . .

- complete uniform light diffusion—"shadowfree lighting"
- low brightness—no glare
- light sources from totally independent concealed fixtures
- will not support combustion; rated as "self-extinguishing" ceiling surface by the standard method Test for Flammability of Plastics as defined by ASTM D568-43
- long-lasting, durable panels with color and dimensional stability essential for translucent ceilings
- a ceiling system where acoustical tile and translucent panels are combined in a layout keyed to the needs of the areas below
- a single panel (Acousti-Lux) which combines light diffusion and sound absorption
- unusual versatility; unlimited custom designs and surface-painted color patterns available
- easy maintenance; convenient size for washing, instant removal for access to light fixtures
- an uninterrupted, level ceiling plane of soft, diffused light



Detail showing installation of Lumicel and Acousti-Lux translucent panels on Alumitee metal suspension system. System consists of rigid 24" x 24" suspended modular, interlocking grid fabricated of extruded aluminum. 1" exposed flanges of "T's" finished in white baked-on enamel. Mechanical hold-down device, easily disengaged for panel removal, keeps translucent panels securely fitted in grid.

FOR FULL DETAILS on Acousti-Celotex LUMICEL and ACOUSTI-LUX, write to The Celotex Corporation, Dept. B-105, 120 S. La Salle St., Chicago 3, Illinois.

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Products for Every Sound Conditioning Problem—The Celotex Corporation, 120 S. La Salle St., Chicago 3, Illinois • In Canada: Dominion Sound Equipments, Ltd., Montreal, Quebec.

We invite you to look at these

Bayley *FACTS*

Your assurance of the complete service and greater value you want from the windows you specify or buy

Policy of Responsibility

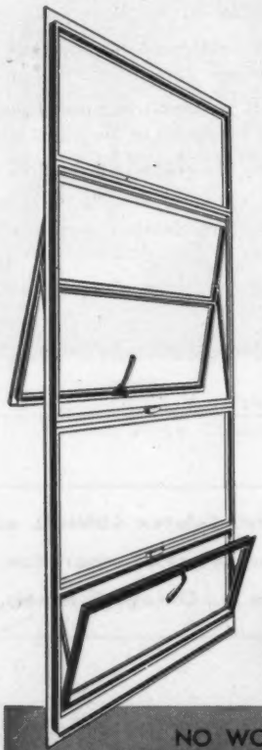
Bayley recognizes that the architect and builder *as well as the supplier* stake their reputations on the quality and performance of every product specified or used. Through 76 years of progressive experience, Bayley has won full customer confidence through consistently superior window *design, construction,* and *service,* backed by the security of time-tested financial soundness.

Nationwide Organization

The skill and experience of Bayley's design engineers and service experts is always at "beck and call", through a nationwide organization of well-staffed company offices, supported by trained, franchised agents. The scope of service extends from consultation at the building's inception to actual window performance at the time of occupancy.

Engineering Know-How

Bayley's large staff of highly qualified design engineers — many of them lifetime specialists — offer assistance that extends beyond the construction of windows alone. They have the *pre-engineering* know-how that integrates window design with building design, for maximum advantages in achieving the utmost in better light, air, vision, beauty and durability.



Manufacturing Facilities

You can be sure that every Bayley Window is *Bayley-made;* produced in Bayley plants by Bayley's own careful craftsmen and production technicians, whose long-accumulated skills in the art of making top-quality windows are supplemented by the finest and most modern manufacturing facilities available.

Background and Experience

Bayley's specialization and leadership in the design and manufacture of windows includes 30 years of pioneering experience in development and perfection of curtain wall systems — giving Bayley a strong lead in meeting today's design trends. A list of the country's outstanding industrial, commercial, public and multiple-residence buildings featuring Bayley Windows is also a list of fully satisfied Bayley customers.

Design Leadership

Bayley has an outstanding record for *anticipating* new needs in window design, construction and operation . . . and for meeting new and changing requirements with improved windows that assure better combinations of light, air, vision, beauty and strength. And Bayley has tempered this pioneering of new trends by insistence on persevering in quality construction. Many Bayley "firsts" in window features have become standard for the industry.

NO WONDER IT'S SO OFTEN SAID THAT —

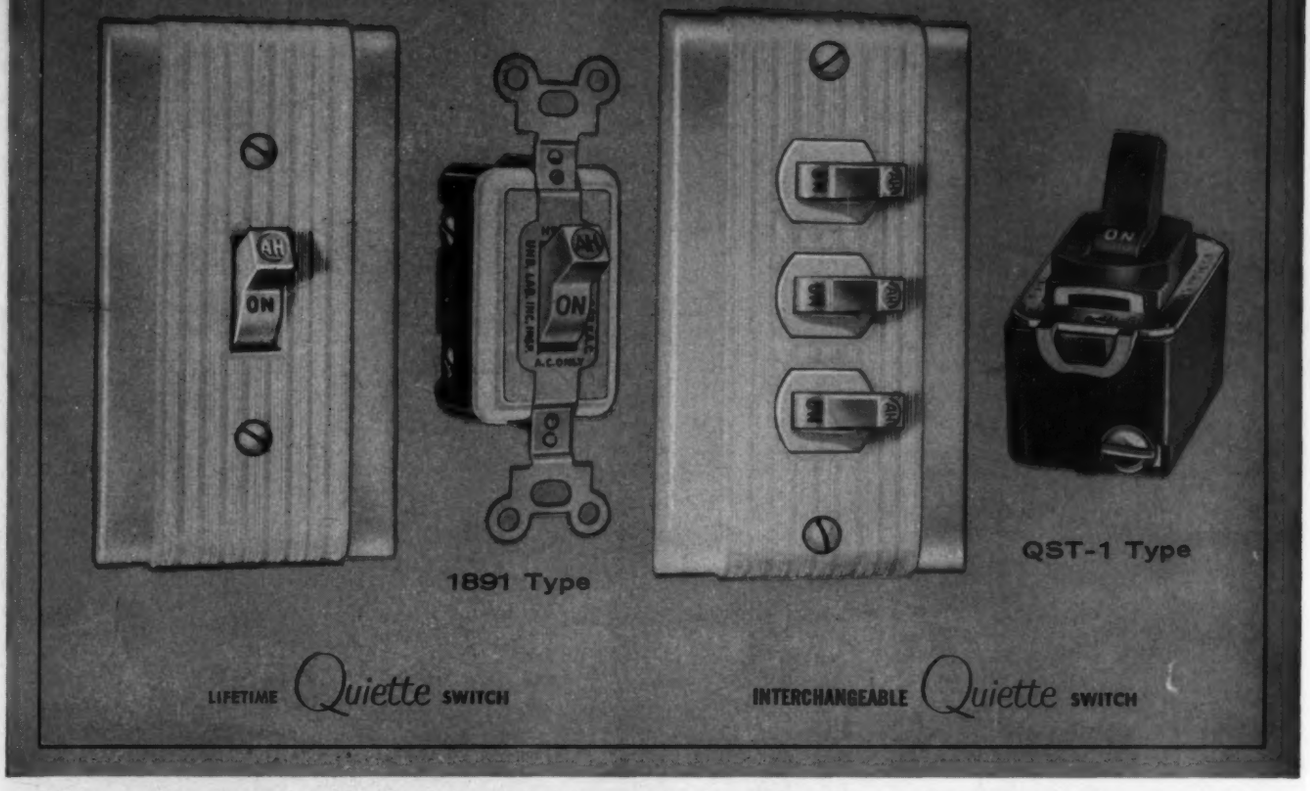
where the *other* services also count — it's always

BAYLEY WINDOWS

THE WILLIAM BAYLEY COMPANY Springfield, Ohio

District Sales Offices: Springfield, New York 17, Chicago 2, Washington 16

FOR THOSE WHO SPECIFY QUIET *and* QUALITY



ALL TYPES NOW AVAILABLE WITH SCREW OR SCREWLESS WIRE-LOCK TERMINALS

A COMPLETE LINE OF ARROW AH HART Quiette LIGHT SWITCHES

In palace or project, the demand is for quality light switches that quietly go about the job of operating both incandescent or fluorescent lights and appliances through smooth mechanical action. The complete line of safe, dependable Arrow-Hart Specification Grade QUIETTE Light Switches fulfills that popular demand.

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Ratings: 15 amp — 120-277 volt ac only; 20 amp — 120-277 volt ac only. With either Screw Terminals or Screwless Wire-Lock Terminals.

INTERCHANGEABLE QST-1 Type:

Ratings: 15 amp — 120-277 volt ac only; 20 amp (with screws only) — 120-277 volt ac only. S.P. and 3-way screwless switches are standard with line shunts.

Both available in single and double pole; 3- and 4-way; Brown or Ivorylite; listed as standard by Underwriters' Laboratories.

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Quality WIRING DEVICES • MOTOR CONTROLS
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COMPANY_____
CO. ADDRESS_____
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Architect: Port of New York Authority; *General Contractor:* S. S. Silberblatt

Bolted Joints Used in Steel Frame for New Hangar at Idlewild

These trusses are part of the steel framework for the enormous new Hangar 8 at New York International Airport, Idlewild. The hangar, about 440 ft, in length was constructed by The Port of New York Authority to house airplanes of the United Airlines fleet.

The structure has a 99-ft-wide service core along its entire length. Roof trusses spanning this core are cantilevered 133 ft out on either side, forming two bays measuring 440 x 133 ft. Because of the ease of access desired, exterior structure supports were prohibited. The steel framework for the hangar was bolted, Bethlehem High-Strength Bolts being used for all of the main connections.

Bethlehem High-Strength Bolts are ideal for joining structural members because they retain their full clamping force, thus providing permanently tight joints. They can be installed quickly, with minimum noise. And being placed cold, they do not present a fire hazard.

Bethlehem High-Strength Bolts are used with two hardened washers, one under the head, the other under the nut. A calibrated pneumatic impact wrench tightens the nut on the bolt to predetermined tension. This results in tremendous clamping pressure.

Bethlehem High-Strength Bolts are made from carbon steel in a wide range of lengths and diameters. They are heat-treated by quenching and tempering. They meet every requirement of ASTM Specification A-325.

If you have any questions about the use of Bethlehem High-Strength Bolts, you'll find the nearest Bethlehem sales office at your service. Why not put in a call for them now? Or, if more convenient, write direct to us at Bethlehem, Pa.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation
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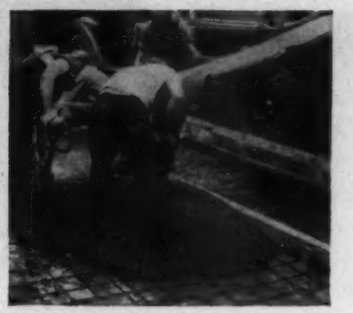
BETHLEHEM STEEL

Master merchandiser Joe Eichler features Visqueen® film Moisture Barrier in his California homes



VISQUEEN film is the best moisture barrier under concrete slabs or floors

VISQUEEN film protects lumber, finished mill work, fixtures—any material subject to water.

No water damage to equipment when you protect with VISQUEEN film.

Acknowledged leader in merchant building, now constructing more than 3,000 homes in 5 California cities, Joseph L. Eichler finds in VISQUEEN film another plus value that helps him sell better living to California home-seekers.

"Our customers never see the VISQUEEN film moisture barrier in our walls," he says, "but when we tell them how it will prevent decay within the studwall, cracking and peeling of paint and other moisture-generated ills, they know we are finding one more way to give more for their money."

important! *VISQUEEN film is all polyethylene, but not all polyethylene is VISQUEEN. Only VISQUEEN, produced by process of U. S. Patents No. 2461975 and 2632206, has the benefit of research and resources of The VISKING Corporation.*

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VisQueen®

For complete details, clip this coupon and attach to your letterhead.

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World's largest producers of polyethylene sheeting and tubing

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Title_____

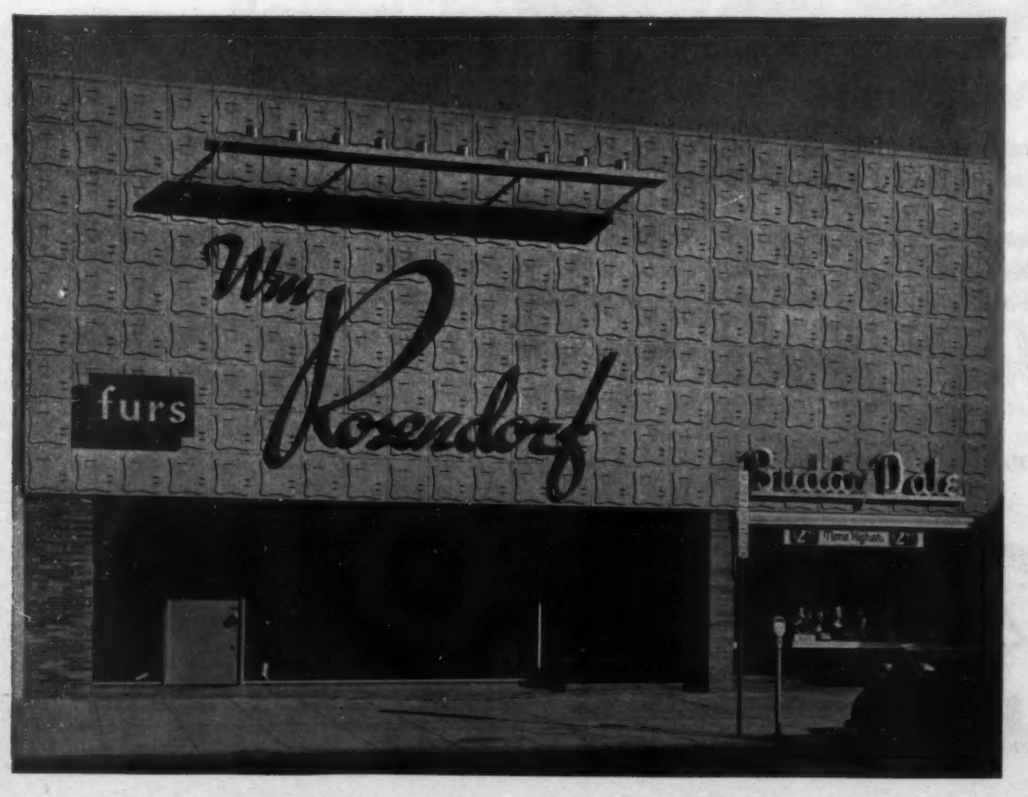
Products_____

LERNER SHOP
Denver, Colorado

Edwin H. Cordes—*Architect*
Associated Lerner Shops, Inc. of Colorado—*Builders*

Two-inch thick Architectural Terra Cotta units 16" x 32", accented with 16" square shingles, make an imposing facade in light mottled gray. Sign space over the show windows is a contrasting green; corner vertical panel a rich harvest brown.

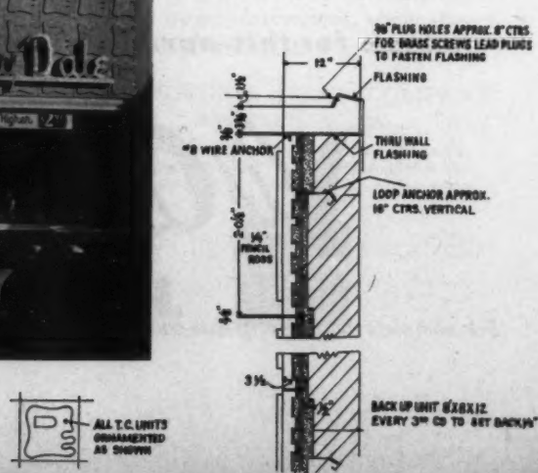
Design possibilities unlimited . . .

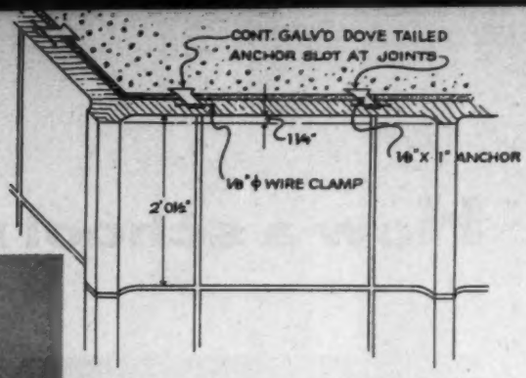


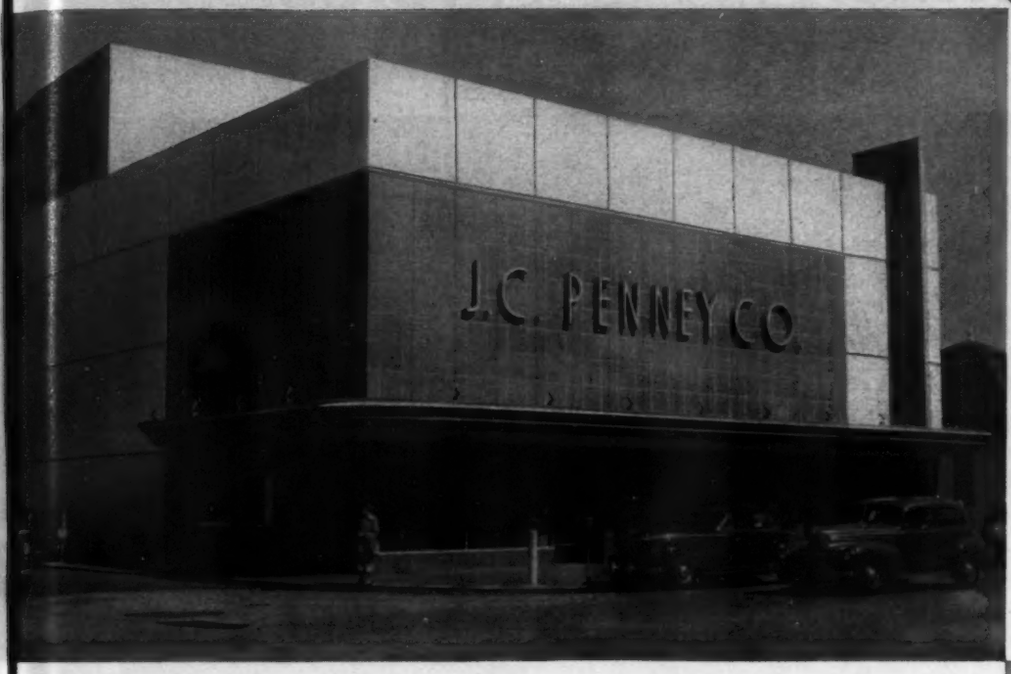
WM. ROSENDORF STORE
Washington, D. C.

Berla and Abel—*Architects*
Tuckman and Rinis—*Builders*

A striking example of today's creative use of Architectural Terra Cotta. Decorative facade is sculptured terra cotta in an attractive light gray.







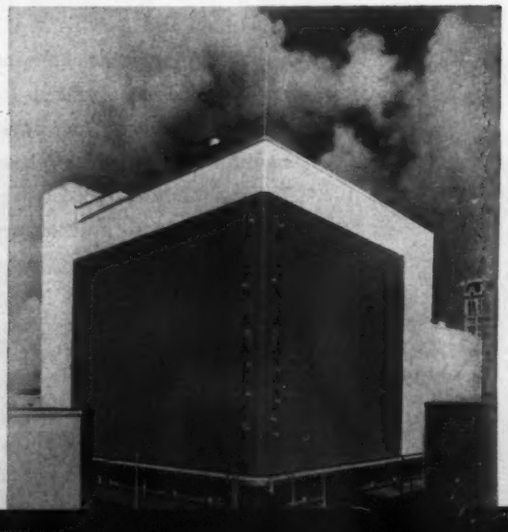
J. C. PENNEY CO. STORE
Clearwater, Florida
Roy W. Wakeling—*Architect*
R. M. Thompson Co.—*Builders*
This modern store's facade is made distinctive by the sea green Architectural Terra Cotta, in units 24" x 24".

... when you specify Architectural Terra Cotta

Store fronts can be modern, colorful, interesting. The versatility of Architectural Terra Cotta assures complete creative freedom. This enables you to design facades that clearly define the character of a business. For decorative panels, sculpture or plain surfaces, you have a vast selection of colors and textures. Whatever the unit size, large or small, Federal Seaboard custom-makes Architectural Terra Cotta to your requirements. Though design possibilities are unlimited, you can still keep initial costs in line, maintenance at a minimum. Only soap-and-water washings are required to retain its original richness and ceramic beauty indefinitely. The advantages of appearance, permanence and price explain why so many other leading architects are specifying Architectural Terra Cotta so often, so effectively.

Construction detail, data, color samples, advice on preliminary sketches, will be furnished promptly without charge on Architectural Terra Cotta and Ceramic Veneer. **FEDERAL SEABOARD TERRA COTTA CORPORATION,** 10 East 40th Street, New York 16, N. Y. PLANT AT PERTH AMBOY, NEW JERSEY

RICHARDS STORE, Miami, Florida
Steward and Skinner—*Architects*
Interstate Marble & Tile Co.—*Contractors*
Old building is given a colorful, up-to-date appearance with aquamarine Architectural Terra Cotta. Units 24" x 24" are grouped in sections of eight by wide mortar joint which gives effect of panels 8' wide by 4' high.

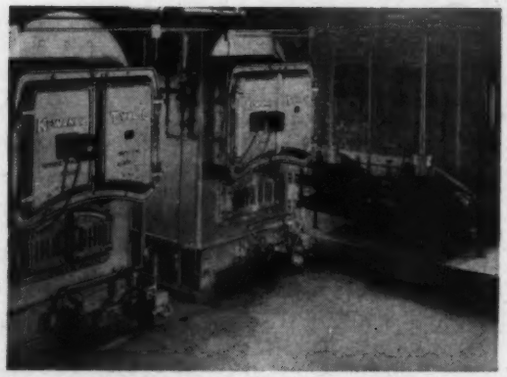


How a school met expansion problems

Crow Island School, Winnetka, Illinois
Architects: Eero Saarinen and Perkins & Will

KEWANEE reserve plus rated boilers... solved future heating needs

One of the urgent problems facing schools today is providing for expansion. Take heating. Added classrooms plus constantly growing enrollment mean boilers should be sized to meet future heating demands. The costly alternative is to provide just enough power initially—then add boilers when expansion creates an emergency. An example of architect foresight is the case of the Crow Island School, Winnetka, Illinois. When it was built fifteen years ago, architects Eero Saarinen and Perkins & Will chose Kewanee Reserve Plus Rated Boilers because they provide sufficient reserve for future needs. Prominent editors, architects and school officials recently completed an examination of equipment used in the school. Their findings showed Kewanee Boilers are "in excellent condition"—meet today's heavier demands—there is no need for additional boilers despite expansion which added 12,779 sq. ft. of new building to house an increased student body. So choose KEWANEE—be prepared for expansion when it comes.



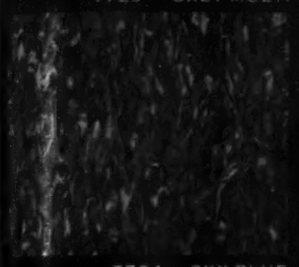
Here are 2 Kewanee Type "C" Boilers installed 15 years ago in the Crow Island School—adequately serving today.

KEWANEE-ROSS CORPORATION KEWANEE, ILLINOIS
Division of American Radiator & Standard Sanitary Corporation

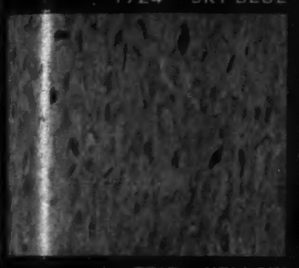
KEWANEE ROSS

Serving Home + Industry American-Standard • American Blower • Church Seats & Wall Tile • Detroit Controls • Kewanee Boilers • Ross Exchangers • Sunbeam Air Conditioners

T729 — GREY MULTI



T724 — SKY BLUE



T718 — YELLOW

T720 — PINK

T728 — CHARCOAL MULTI

T727 — WHITE

T722 — MIST GREEN

T730 — BEIGE MULTI

Here's Inlaid Linoleum at its beautiful best—

GOLD SEAL "SEQUIN"

Gold Seal Sequin® is fast becoming America's favorite Inlaid Linoleum . . . thanks to its distinctive beauty and to mass promotions in Life, Better Homes & Gardens, and Sunset.

The trend to basic, smooth-surface, virtually seamless flooring throughout the house is unmistakable. Here are just a few reasons why you are so safe in specifying Gold Seal "Sequin" Inlaid Linoleum.

Ease of maintenance . . . resists dirt, grime and dulling film. Cuts cleaning time and costs to a minimum.

Resilient . . . deadens floor noise. Resists permanent indentation from furniture.

Quiet and comfortable . . . eliminates noisy clatter common with hard floors.

Beautiful . . . suggest hundreds of smart, special designs . . . wide range of colors to harmonize with any decorative scheme.

Stays beautiful . . . colors are inlaid for long-lasting beauty.

Economical . . . initial costs can be amortized over a long period of time. Lasts longer than lower-cost floors.

Guaranteed . . . Gold Seal Inlaid Linoleum gives you the famous Gold Seal guarantee . . . satisfaction or your money back.

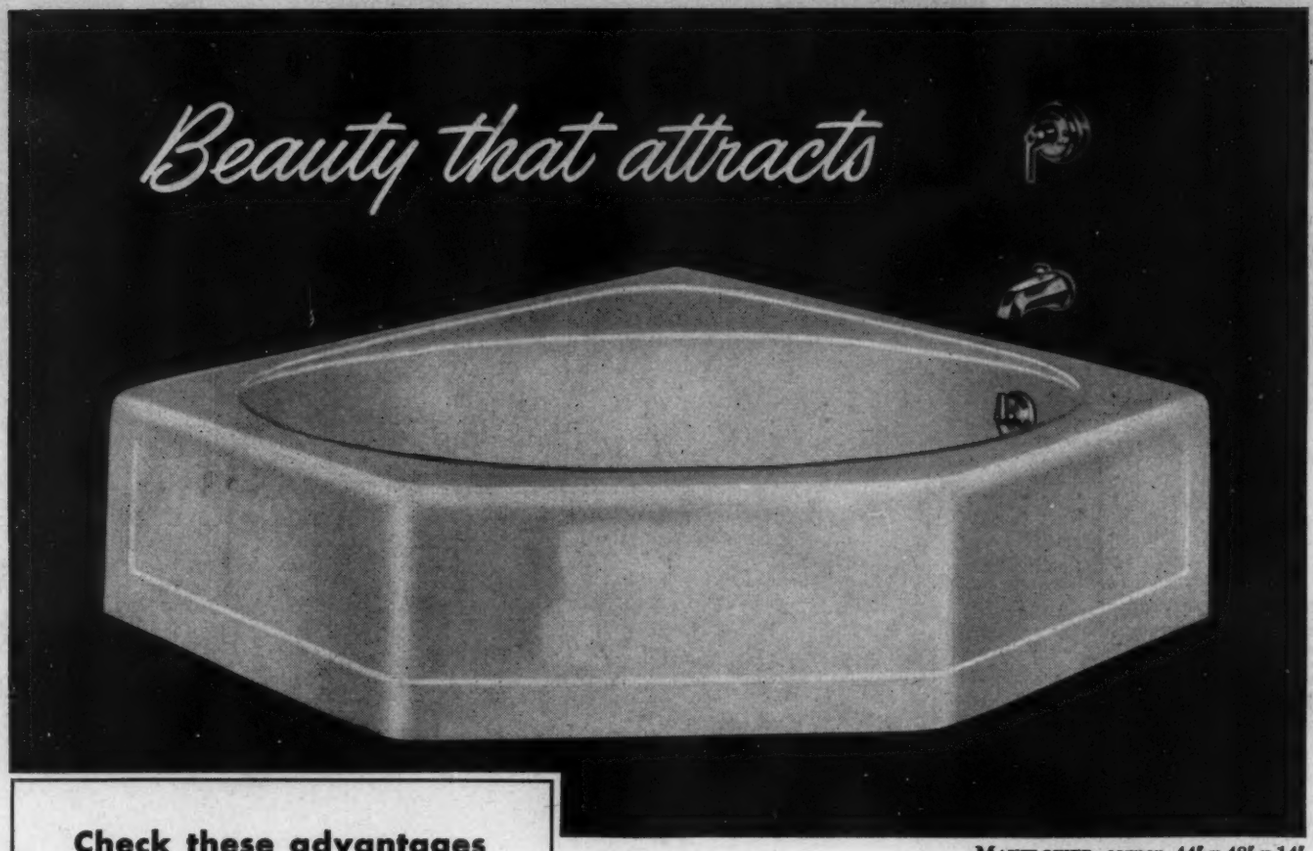
Specifications: 16 patterns. Standard gauge. 6 ft. wide by-the-yard. Install over suspended concrete or wood sub-floors. Exclusive SuperFlex* backing allows direct application . . . needs no extra lining felt. For details write: Architects Service Department.

*Trade-Mark

FOR HOME OR BUSINESS YOU GET THE FINEST CHOICE OF ALL IN...

Inlaid Linoleum • Ranchtile® Linoleum • Resilient Tiles • Congoleum® & Congowall® Enamel-Surface Coverings • Vinylflor • Vinyltop

GOLD SEAL
FLOORS AND WALLS
CONGOLEUM-NAIRN INC., KEARNY, N. J.



MAYFLOWER, corner. 44" x 48" x 14"

Check these advantages

RIGID CAST IRON

Sparkling, easy-to-clean Kohler enamel is fused to a base of non-flexing iron, cast for strength and rigidity.

TILING-IN RIM

An integral flange that simplifies leak-proof installation with dry-wall or plaster construction

MACHINE GROUND

Uniform length and width dimensions for fast, accurate tub-setting, wall-finishing.

QUALITY FITTINGS

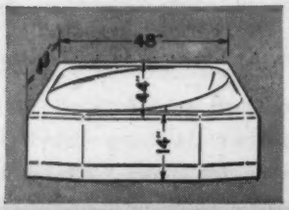
Designed expressly for Kohler fixtures, engineered for easy reliable operation.

KOHLER BATHS

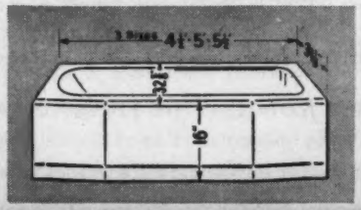
THE MAYFLOWER introduces fresh individuality and grace for modern bathrooms. A roomy bathing area of pleasing oval design and an integral seat are provided within an overall shape that permits many new arrangements.

COMPLETE LINE • Kohler baths, in white and six colors, range in style, type and size to meet every taste or budget—and answer any problem of space or arrangement in homes, apartments, hotels, motor courts.

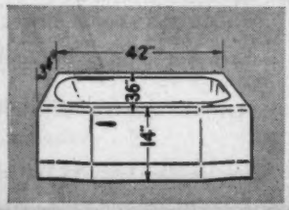
MAYFLOWER, recess. Integral seats. All parts can be reached for cleaning.



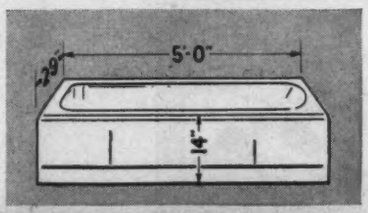
COSMOPOLITAN, recess. Luxurious roominess. Recess type in 3 lengths. Corner model in 4½' and 5' lengths.



STANDISH, shower-size. For homes, apartments, motor courts, dormitories.



MINOCQUA. First quality bath. Width makes it practical and popular for use in remodeling.



Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS • AIR-COOLED ENGINES • PRECISION CONTROLS

PRESTRESSED CONCRETE OFFICE BUILDING

MULTIPLE STORY - CONTINUOUS DESIGN

Office building for United States Fidelity and Guaranty Company, Richmond, Va. . . . Architect, J. Henley Walker, Jr.; Structural Engineer, Wm. J. Blanton; Prestressed members by Concrete Structures Incorporated; General Contractor, Daniels Construction Company, all of Richmond.

COMPLETELY PRECAST and finished months ahead of the best estimated schedule for other materials, this structure cost the owner only $1.62 per square foot per floor level in place.

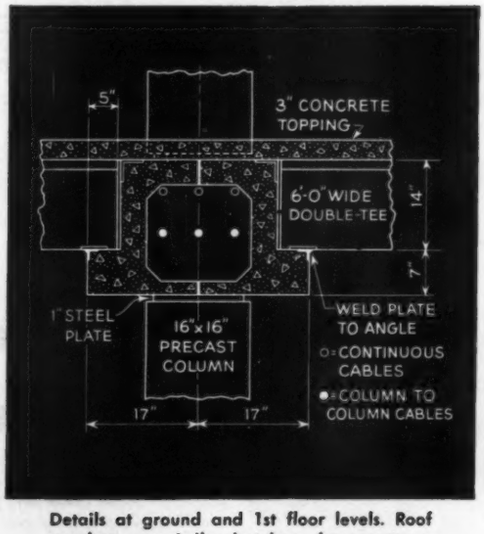
Precast reinforced columns, 32′ on centers, have steel plates welded to girder plates creating a rigid frame.

Hollow girders, precast in halves and assembled into 32′-long members post-tensioned with three cables before erection, have three additional continuous cables added after erection. Hollow was filled with grout after tensioning. Cables are Freyssinet type, each composed of eighteen 0.196″ diameter Roebling prestressed concrete wires.

Each 6′-wide double tee floor section, supported on girders 33′-4″ on centers, is stressed with sixteen ⅜″ diameter Roebling uncoated 7-wire stress-relieved prestressed concrete strands, pretensioned and bonded. Roof double tees have twelve ⅜″ strands.

All precast concrete is 6000 psi ultimate.

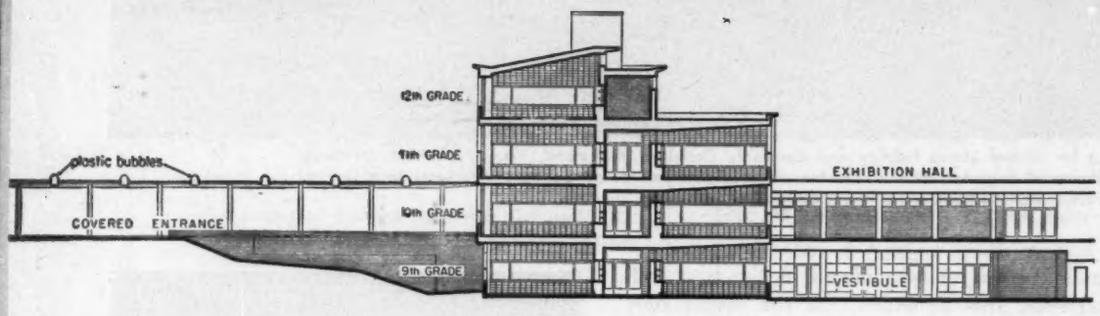
Roebling engineers will be glad to give you full information on tensioning materials and fabrication methods. In addition, they are ready to cooperate with you to help attain top efficiency on any given application of this modern and economical structural material. Contact Construction Materials Division, John A. Roebling's Sons Corporation, Trenton 2, N. J.



Details at ground and 1st floor levels. Roof members are similar but have less prestress.

ROEBLING

Subsidiary of The Colorado Fuel and Iron Corporation



How a school was designed at savings of 31% in floor system costs

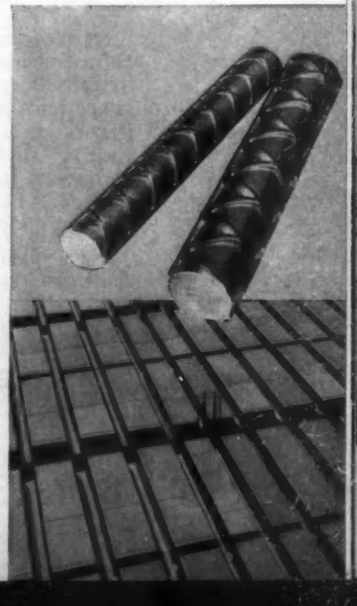
CECO STEEL

In construction products CECO ENGINEERING makes the big difference

Bishop DuBourg High School—St. Louis, Missouri
Architects: Murphy & Mackey/Structural Engineer: Neal J. Campbell
Contractor: C. Rallo Contracting Company, Inc.

Ceco-Meyer Removable Steelform Construction proves more economical than solid slab or tile filler in study made for Bishop DuBourg High School in St. Louis. When a school is designed around a program planned jointly by architects and educators, it is possible to cut costs and at the same time satisfy functional and psychological needs. So goes the story of Bishop DuBourg High School. Architects Murphy & Mackey asked the school administrators to outline physical requirements and spiritual essentials. On the basis of that data, they created a pupil-centered school with a warm, human atmosphere instead of an institutional feeling. The building is four stories high, with each floor a one-grade school in itself . . . classes stacked one above the other. Common facilities, including library, shop and gymnasium, are tied in so students can reach them without walking through corridors used by other grades. With layout settled, methods of construction then got a critical eye, Floor systems studied were (1) solid slab and (2) concrete joist construction formed with (A) tile filler and (B) removable steelforms. Ceco-Meyer Removable Steelforms were selected on the basis of 31% savings in cost over solid slab and 27% over tile filler. Reasons for savings: less forming lumber, concrete, steel and labor than solid slab; less material cost than tile filler. Also the Ceco method was deemed the most practical and fastest for rigid fire-safe construction. So on your next building project consult Ceco Engineers in the preplanning stage. Chances are they can help you on advance programing so savings can be made in time, material and labor.

Underside view of concrete joists formed with Ceco-Meyer Removable Flange-Type Steelforms, showing tie-wires for ceiling attachment.



Ceco Reinforcing Steel was fabricated in accordance with design drawings. Delivery was made to the job site as required by the contractor's construction schedule, thus saving double handling on the job.

View of Ceco-Meyer Steelforms in place, ready for placement of reinforcing steel.

CECO STEEL PRODUCTS CORPORATION

OFFICES, WAREHOUSES AND FABRICATING PLANTS IN PRINCIPAL CITIES
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CITIZEN'S NATIONAL BANK*
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Modern As Tomorrow

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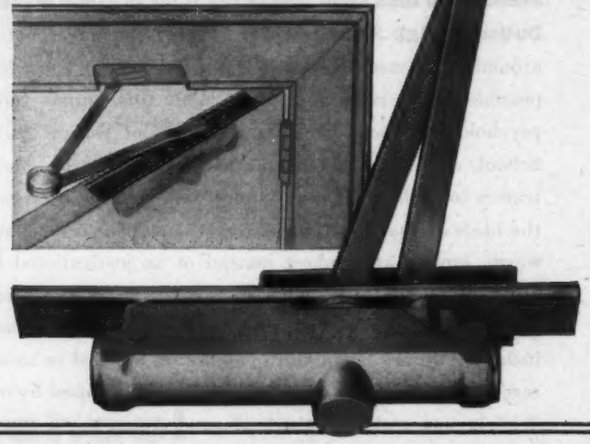
NORTON "INADOR"

Used Throughout This Striking New Bank To Preserve the Modern Functional Design Without Loss of Door Closer Efficiency

The considerations which prompted selection of Norton "Inador" in the impressive structure above have won it the same distinction in hundreds of other new buildings across the country. The "Inador" is almost invisible because its extremely compact mechanism is entirely concealed in a mortise in the top rail of the door. There is nothing to distract in any way from the beauty of the door itself.

At the same time, every *Norton "Inador"* is a precision instrument designed and built to last longer under hard service...require less maintenance and provide the long range economies so imperative in all public buildings. If, therefore, you have any such buildings "on the boards" today, by all means look into the advantages of *Norton "Inador"* before door closer specifications are decided upon.

Write today for FREE Catalog on Norton's full line of concealed and surface door closers.



Check These Exclusive Norton Features:

- ✓ **Rack and Pinion Construction** gives uniform, positive checking at every point!
- ✓ **New Aluminum Shell** for lighter weight, robust wear. Proved by use on our surface closers for over 7 years!
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- ✓ **Double Adjusting Levers**, easily moved by fingers, control speed of closing action and latching action!
- ✓ **Regular Arm Series**, as well as Holder Arm models, so suitable for hospital use!
- ✓ **Famous Guarantee** for 2 full years, providing proper recommended sizes are used!

75 years of leadership in door closers

NORTON DOOR CLOSER CO.
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Division of The Yale & Towne Mfg. Co.
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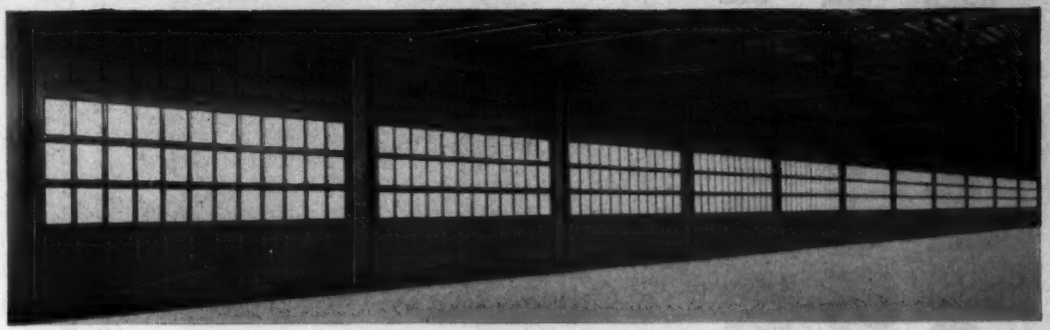
NATIONAL FOOD STORES MILWAUKEE DISTRIBUTION CENTER speeds heavy truck traffic with 19 Crawford Industrial Doors equipped with Electric Operators



National Tea Co. branch office and warehouse in Milwaukee is a typical modern industrial structure in which functional efficiency and good design are competently combined. The building is of steel and masonry construction and is 574 feet long, 399 feet wide and 16 feet high. It encloses approximately 230,000 square feet of floor space. As a branch warehouse for National Tea Co. which supplies all the merchandise for the National Food Stores in Wisconsin and Upper Michigan, it handles merchandise traffic up to 500 tons a day in about 100 vehicles.

To accommodate this traffic, the building is equipped with 12 — 18′0″ x 14′0″ and 7 — 12′0″ x 14′0″ Model SLA Crawford Marvel-Lift Industrial Doors, all equipped with electric operators with local and remote controls. Because of the sturdy construction of these doors and the cushioned operation achieved through the use of electric operators (always easier on doors than manual operation) these doors are in excellent condition after three years of constant use. If you have a door problem, we'll welcome your inquiry and it will get quick, intelligent attention.

Architects, write for complete file of Crawford literature including the Crawford 60-Second Door Selector, the easiest-to-use door manual ever published. Crawford Door Company, 175-20263 Hoover Road, Detroit 5, Michigan. Plants in 10 cities; Warehouses in 95 cities; Sales and Service everywhere. In Canada, F. Fentiman & Sons Ltd., Ottawa, Ontario.

National Tea Co., Milwaukee, Wis.

Architect and Engineer: **Lefebvre & Wiggins, Milwaukee**

Contractors: **W. W. Oeflein Inc., Milwaukee**

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J. W. WILDE
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Crawford MARVEL-LIFT Doors

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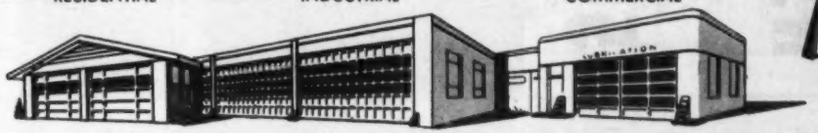
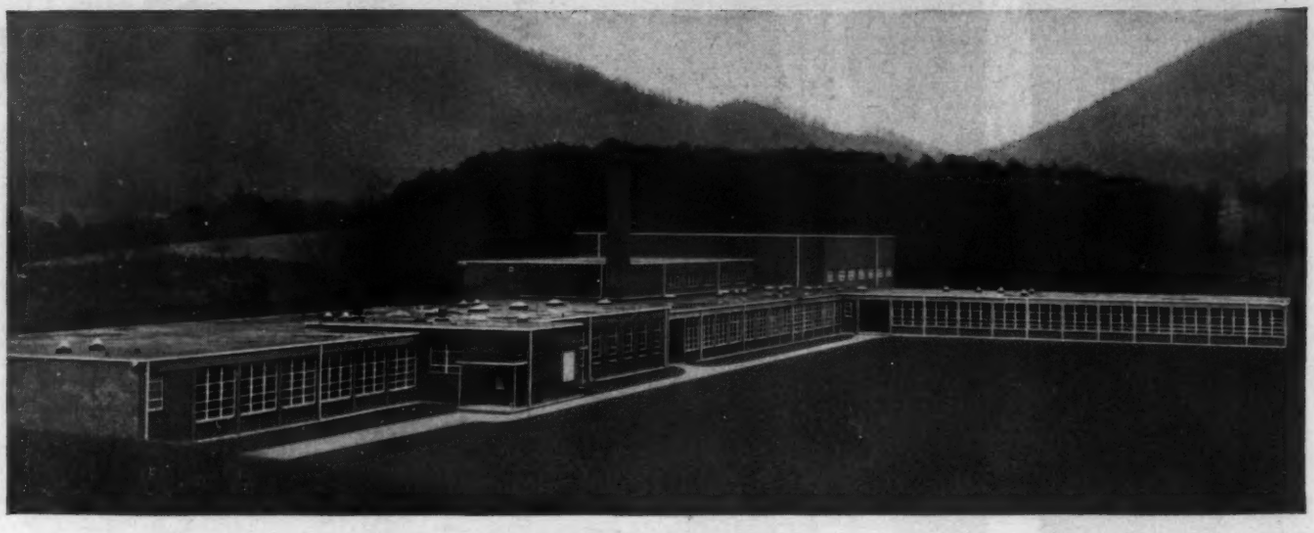


SEE OUR CATALOG IN SWEET'S

25th YEAR

N. Carolina School Board Specifies Combustioneer Stokers In New 5-Building, $3,235,000 Program!



Buncombe County School Board bases choice on Combustioneer's patented respirator, extended worm gear features, low initial cost.

In the past 25 weeks, five of the most modern, up-to-date school buildings to be found anywhere in the nation have opened their gleaming doors to more than 3,000 students in Buncombe County, North Carolina. Over $3,235,000 have gone into this new building program . . . with the school board, the architects and the builders working hand in hand . . . assuring each voter that every tax dollar is getting a full 100c worth of school.

A. C. Reynolds High School *(above)*, located in Biltmore, is certainly one of the most beautiful of all. Designed by the firm of Lindsey Madison Gudger, Asheville architects, the building boasts of 72,000 square feet of functional floor area—and was "delivered" to the school board early in 1955.

All five of these new Buncombe County school buildings are heated with the latest model Combustioneer Bin-Feed Stokers!

Combustioneer Stokers were the natural selection. Exclusive, patented features contained only in Combustioneer Stokers provide the most even, constant, superbly economical heating systems available. The *Agitating Transmission*, for instance, keeps the fire-bed open and free-burning. The famous Combustioneer *Automatic Respirator* controls the air delivery for maximum combustion and smoke-free stacks. (Heating engineers are overwhelmingly enthusiastic about these two exclusive Combustioneer features!)

There's a Combustioneer Hopper or Bin-Feed Stoker just right for any application—and they range in size from 9 to 1,000 lbs. per hour. So, for the very latest in economical heating, with savings up to 25% and more, write today for Combustioneer's new folder "The Buncombe County Story"—which gives factual data on these five new school buildings.

Shown are (right to left): Mr. T. C. Roberson, Superintendent of Buncombe County Schools; Mr. R. A. Tomberlin, Assistant, and Mr. Oliver Spencer, Jr., Combustioneer District Manager for North and South Carolina. Mr. Roberson gave four reasons for the board's selection of Combustioneer Stokers: (1) Price, (2) Extended Worm Gear, (3) Automatic Respirator, (4) Combustioneer's Performance.

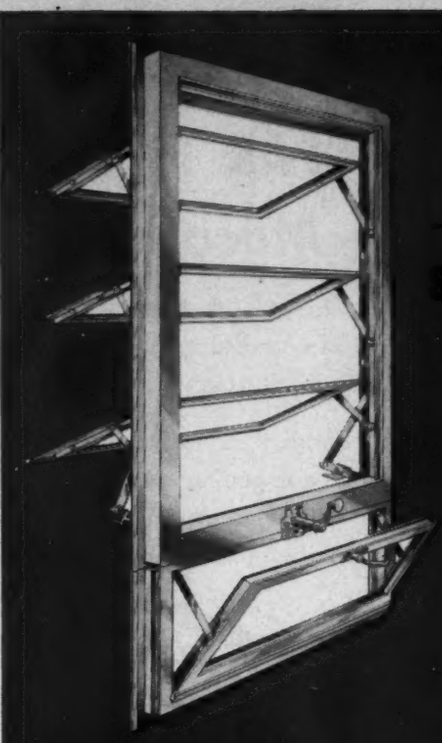
COMBUSTIONEER DIVISION
THE STEEL PRODUCTS ENGINEERING COMPANY
1237 West Columbia Street, Springfield, Ohio

Combustioneer

LOW AND HIGH PRESSURE OIL BURNERS • GAS BURNERS
OIL, GAS, COAL FURNACES • STOKERS • HUMIDIFIERS

Ualco aluminum

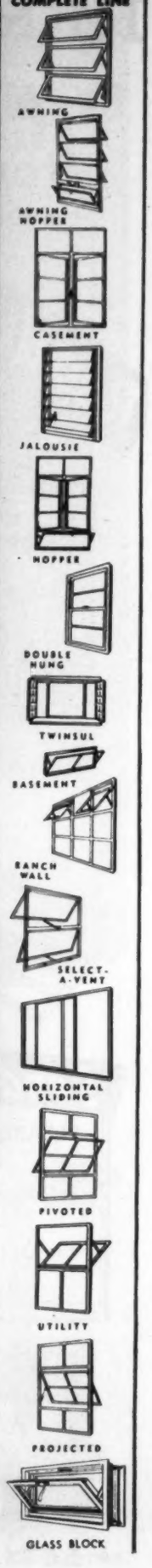
Awning Window with SELF-MULLIONING HOPPER VENT



PROVIDES DRAFT-FREE VENTILATION • SPECIFIED FOR HOSPITALS, SCHOOLS

Ualco ALUMINUM AWNING HOPPER

THE COMPLETE LINE



The Ualco Awning Hopper Vent provides needed draft-free ventilation—even during inclement weather. Opens, regulates, and closes easily.

Specified with Ualco's Awning Window, the two are self-mullioning, have integral fins which take brick fin and fin trim. Both are made of heavier extruded aluminum; never warp, rust, rot or need painting.

Ualco Awning Window opens up to 90 degrees . . . vents can be unlocked, opened and locked in any position automatically by Ualco's exclusive strip-proof operator.

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SEE OUR CATALOG IN SWEET'S FOR COMPLETE INFORMATION

ARCHITECTURAL FILE 16A OR LIGHT CONSTRUCTION FILE 5A U UN

SOUTHERN SASH'S Ualco . . World's Largest —In More Buildings Than Any Other Aluminum Window

★ *Ualco Aluminum Windows Are Unconditionally Guaranteed Against Defective Materials and Workmanship.*

HERE IS STRENGTH AS ENGINEERED

BY MACOMBER FOR EACH LOAD AND SPAN TO 96'

From the Designer's Standpoint–Macomber

gives you not only the six standard types of parallel and sloping chord Longspans in underslung and square end designs but ADAPTABILITY to all framing conditions.

You may want top chords extended for an eave overhang or bottom chord extended for ceiling attachment, square ends punched or fitted with bearing plates. Look to Macomber for a more economical solution . . . Longspans completely flexible to the designer's needs.

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Center line suspension using Nylon rollers at every fold

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Anchor post snap locks into secure position — no visible screws

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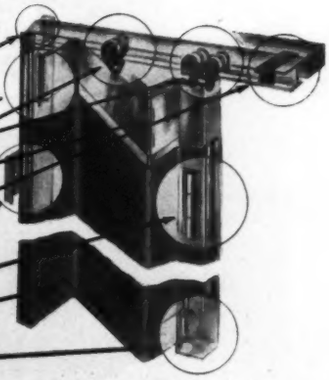
The finest Vinyl coated fabrics, completely washable

Wing-nut adjustment provides accurate positioning of lead post to jamb



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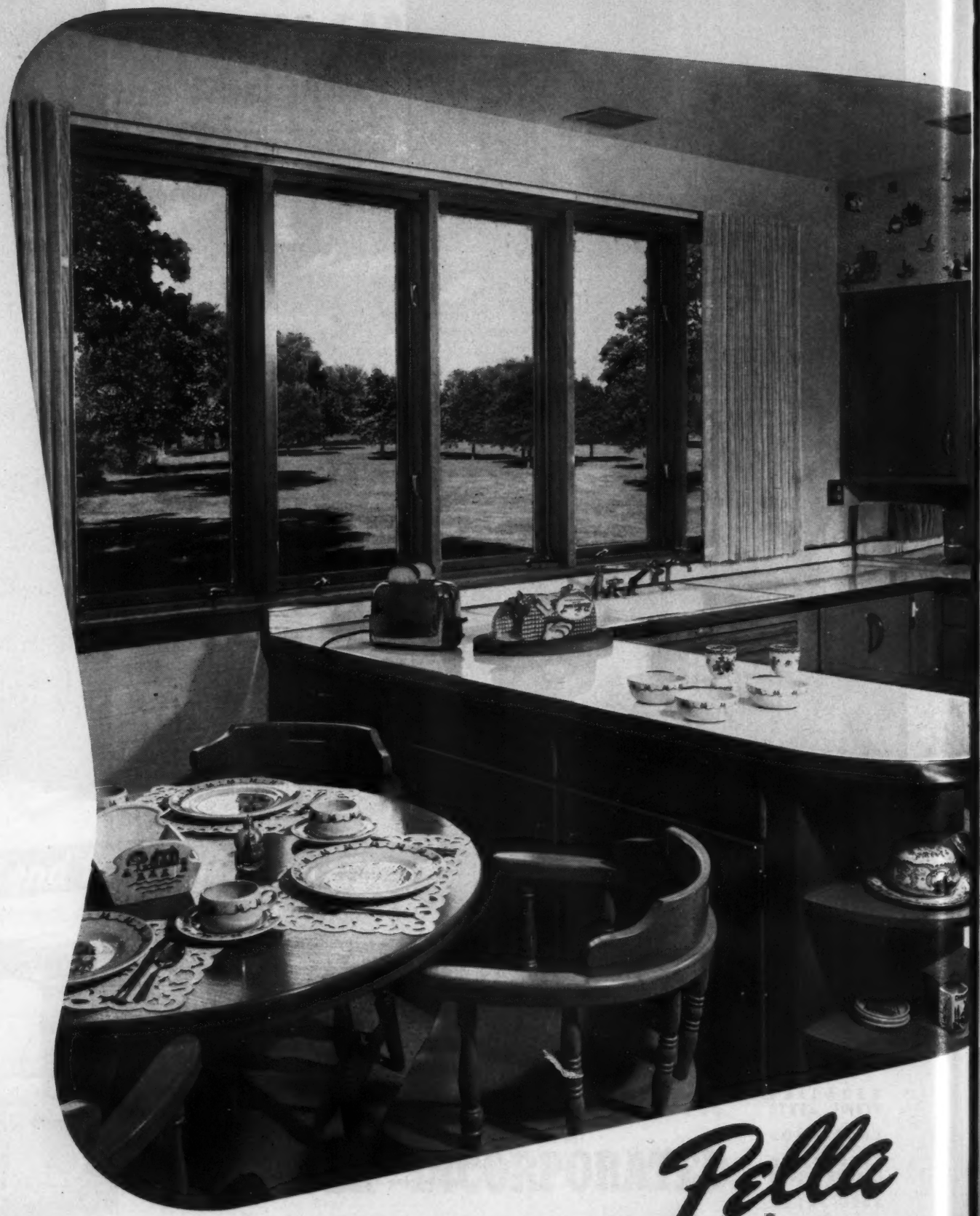

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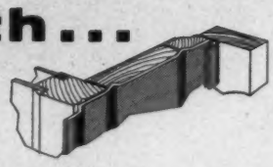
WOOD CASEMENT WINDOWS

the charm...from wood
the strength...
from steel



ROLSCREENS

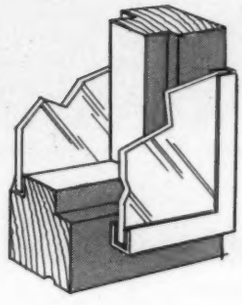
All Pella Casements are equipped with inconspicuous Pella Rolscreens—that roll up and down like a window shade. Need no putting up, taking down, repairing or storage.

PELLA WOOD CASEMENT WINDOWS combine the charm and insulating qualities of wood with the strength of steel. For a 16-gauge steel frame reinforces the sturdy wood lining to provide maximum rigidity. This steel frame extends the full width of the jamb and is continuous around all four sides of the window. The hinge butt plate is anchored to the solid steel frame. That's why PELLA CASEMENTS always hang true and can be furnished with glass sizes up to 24″ x 60″—the largest wood casement sash on the market.

The wide range of PELLA stock sizes in modular widths, used singly or in combination, makes it possible to create perfect window arrangement for every design concept. Glass sizes are 16″, 20″ and 24″ in width and range up to 60″ in height. Furnished with both horizontal and vertical muntins, with horizontal muntins only, or without muntins.

PELLA CASEMENTS fit snugly in all types of wall construction. They are completely assembled with hardware fitted at the factory.

A quality window competitively priced. Investigate today. See our catalog in Sweet's or mail the coupon today for free literature. Distributors are located in major cities of U.S. and Canada.



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The year 'round Pella self-storing storm window protects against winter cold and summer heat. Reduces street noises up to 40%. Glass sets in a neat aluminum frame, vinyl-lined to keep out dust.

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WOOD CASEMENT WINDOWS

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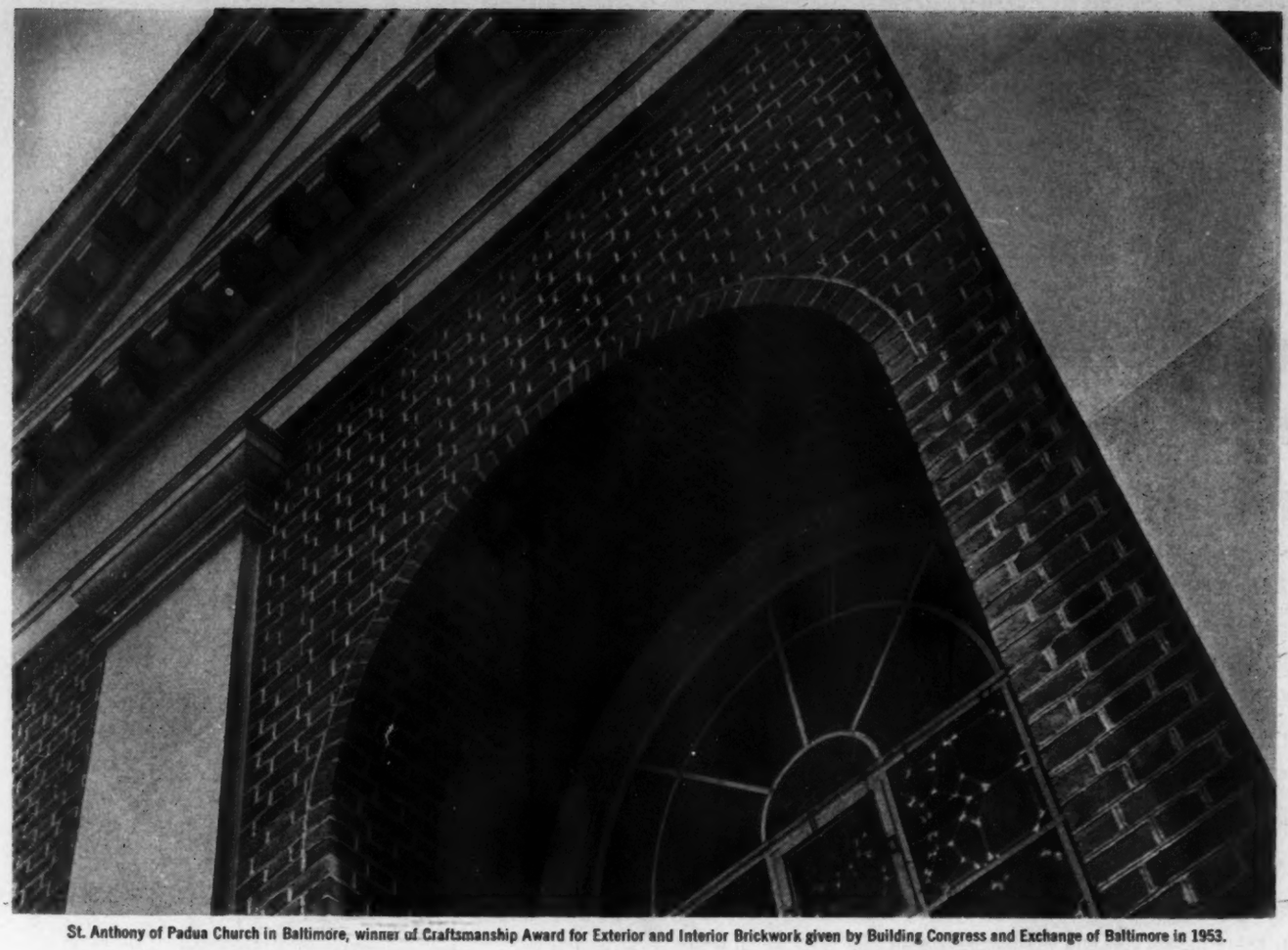

St. Anthony of Padua Church in Baltimore, winner of Craftsmanship Award for Exterior and Interior Brickwork given by Building Congress and Exchange of Baltimore in 1953.

quality masonry . . . with LEHIGH MORTAR CEMENT!

The St. Anthony of Padua Church is an outstanding example of the finest in masonry construction. It shows the results of good design, good workmanship and quality materials.

One of the quality materials—Lehigh Mortar Cement—was used for all masonry. Its workability and plasticity contributed to good workmanship. Its compressive strength and bonding power helped to make strong, weathertight walls.

You can approve Lehigh Mortar Cement with the assurance that it exceeds the requirements of the most rigid Federal and ASTM specifications, including the autoclave test for soundness.

LEHIGH MORTAR CEMENT
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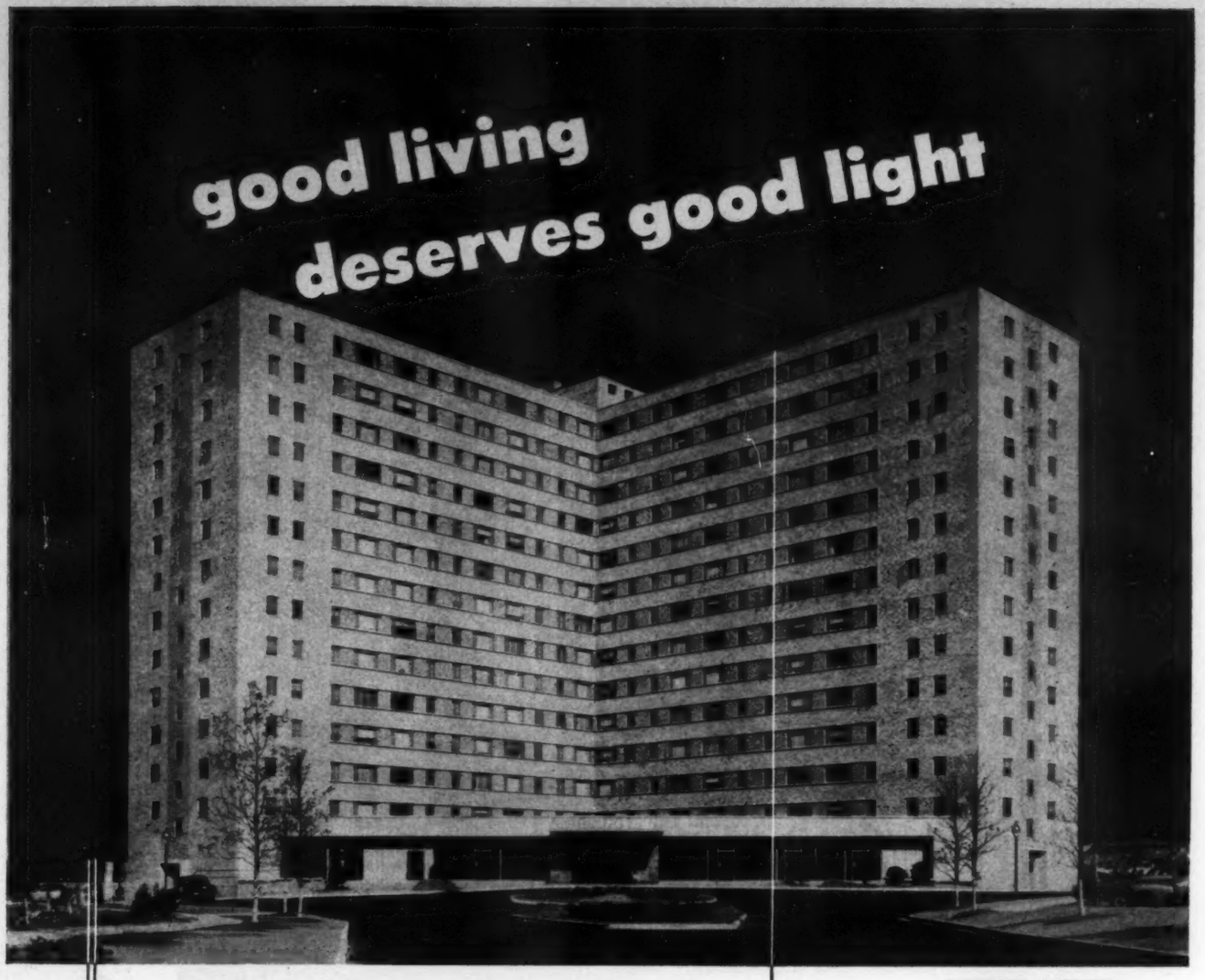
LEHIGH PORTLAND CEMENT
LEHIGH AIR-ENTRAINING CEMENTS

LEHIGH PORTLAND CEMENT CO. *Allentown, Pa.*

Architect: GAUDREAU & GAUDREAU, Baltimore, Maryland
General Contractor: E. EYRING & SONS CO., Baltimore, Maryland
Masonry Contractor: McCULLOUGH BROTHERS, Baltimore, Maryland



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Today's residential and non-residential designers are giving increasing attention to more and better natural lighting—and American's LUSTRAGLASS is being specified because it transmits more daylight. LUSTRAGLASS has extraordinary flatness and freedom from distorting waviness. Yet, with all its distinct advantages, LUSTRAGLASS costs no more than ordinary window glass.

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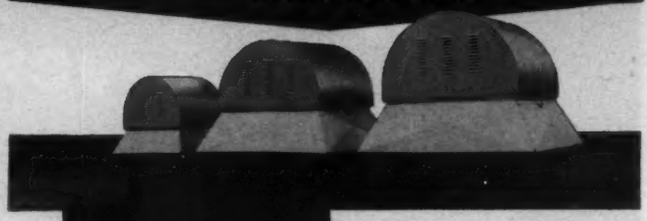

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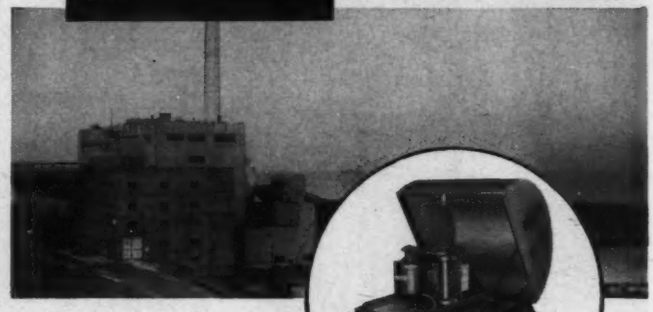

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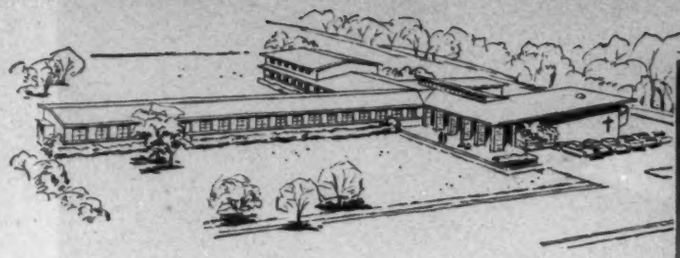

ST. JOSEPH'S HOSTEL,
Dallas, Texas

Architect: *George Dahl and Associates*
General Contractor: *Sachs & Stevens*
Acoustical Contractor: *United Tile Company*
Acoustical Materials: *Armstrong Travertone*
Armstrong Cushiontone

Restful comfort and quiet beauty provided by the Travertone* acoustical ceiling make residents and guests feel pleasantly at home. Because Travertone's fissured surface is so easy to maintain, it stays fresh and new-looking for many years.

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As one of the first architect-designed homes for the aged, St. Joseph's Hostel in Dallas is one of the first specifically planned to meet the needs and problems of the elderly.

Because the project called for new construction and not mere remodeling on an existing building, the architect was able to create an atmosphere of modern comfort and luxury for the Hostel's residents. The basic T-shape of the structure provides maximum air and light in all rooms, while sound-absorbing Armstrong ceilings assure restful quiet throughout.

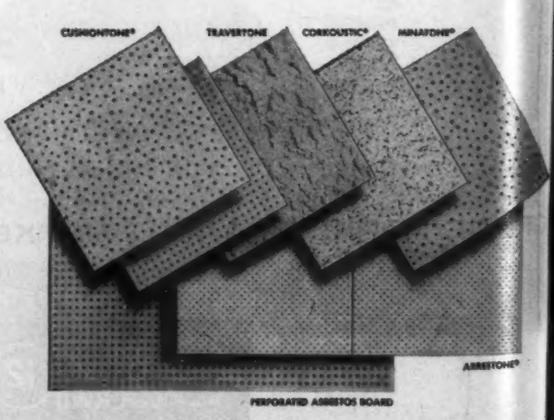
In public areas of the building, such as the lounges and cafeteria, ceilings of Armstrong Travertone are used. Travertone was chosen for its beauty as well as for its noise-quieting efficiency. A handsomely textured mineral wool material, Travertone absorbs up to 80% of the sound that strikes it. Incombustible Travertone also adds a measure of fire safety.

To quiet the residential wings, Armstrong Cushiontone was installed. Cushiontone is a low-cost, perforated wood fiber tile often used when large areas must be sound conditioned economically. Both the Cushiontone and Travertone were mechanically suspended to provide easy access to utility lines between ceiling and roof deck.

You can get full details on the entire line of Armstrong acoustical products by calling in your Armstrong Acoustical Contractor. For the free booklet, "Armstrong Acoustical Materials," write Armstrong Cork Company, 4210 Rock Street, Lancaster, Penna.

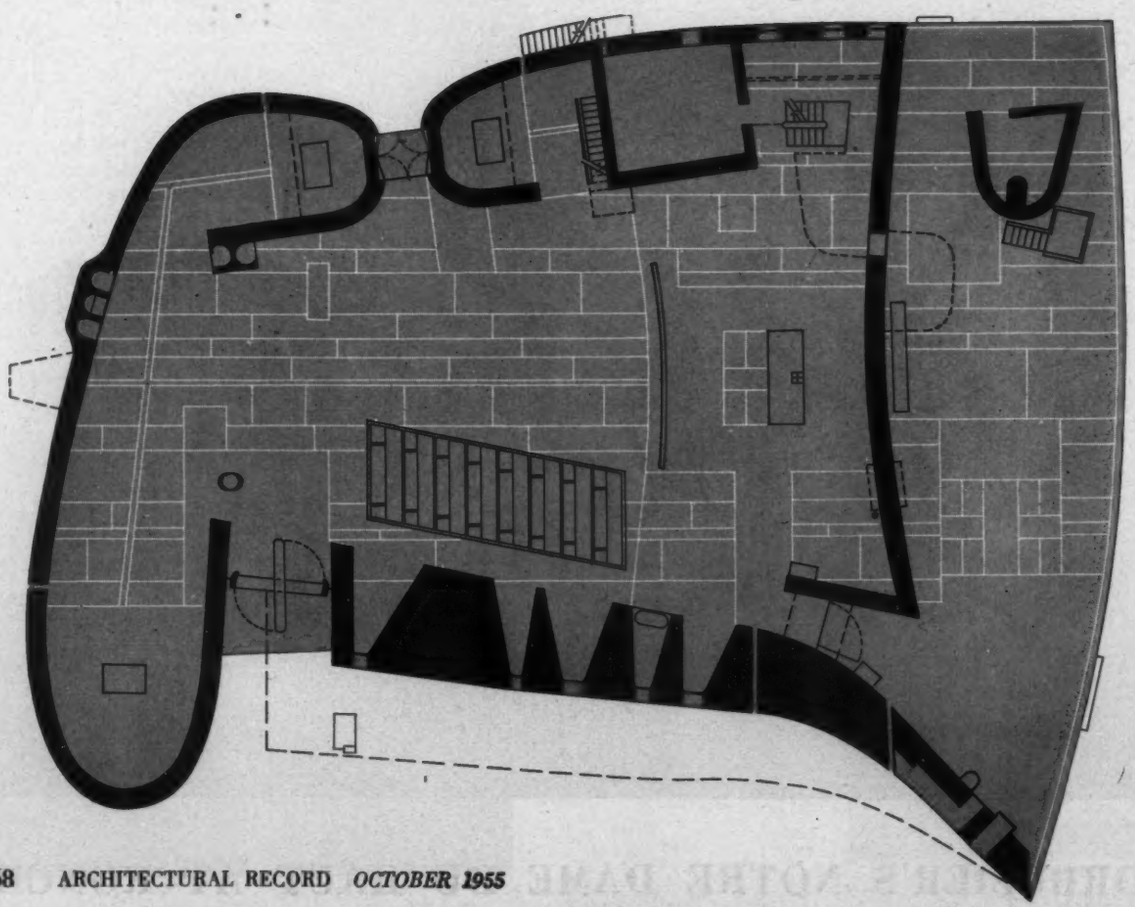
Armstrong
ACOUSTICAL MATERIALS

By muffling noise of footsteps and voices, the Cushiontone ceiling keeps this corridor and adjoining TV area comfortably quiet. Cushiontone's white paint finish can be cleaned or repainted easily without loss of acoustical efficiency.



Magnum Photos Inc.

LE CORBUSIER'S NOTRE DAME DU HAUT AT RONCHAMP



PARIS

JOHN SHEAR

ARCHITECTURAL RECORD
NEW YORK

CORBU HAS MADE GREAT PROGRESS IN ARCHITECTURAL COMPOSITION. NOTRE DAME DU HAUT CHAPEL IS HIS BEST. DOUBTS CREATED BY ALL PUBLISHED PHOTOGRAPHS COMPLETELY ERASED BY ANALYSIS "A PIED D'OEUVRE." BERNINI'S AND BORROMINI'S TOOLS WERE USED BY CORBUSIER AS 13TH CENTURY ONES WERE USED BY PERRET AT NOTRE DAME DU RAINCY. GOOD ADAPTATION TO SITE AND LIFE WITH SAME BASIC TOOLS USED IN SANCTUARIES BY GREEKS, MAYANS, CHRISTIANS, ETC. EVERYTHING IS THERE INCLUDING CORBUSIER'S SIGNATURE BY FINGERPRINTS NEAR THE SYMBOL OF THE VIRGIN MARY. UNFORTUNATELY CROSS AND CHRIST WITHIN CROSS PERFECT EXAMPLE OF ARCHITECTURAL ANTI-CLIMAX YET ELEMENTS OF COMPOSITION ARE MAGNIFICENT EXAMPLE OF MONUMENTALITY WITHIN MINIMUM PHYSICAL SIZE. RONCHAMP EXPRESSES A LIBERATION OF CORBUSIER FROM CORBUSIER.

LABATUT

***Prof. Jean Labatut**, Director of Graduate Studies, School of Architecture, Princeton University, visited Ronchamp on behalf of* ARCHITECTURAL RECORD. *Prof. Labatut's acquaintance with Corbusier and his work dates from 1920*

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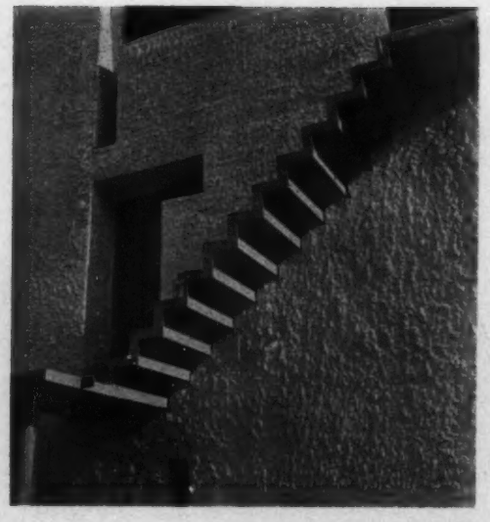

CHAPEL

CHAPEL

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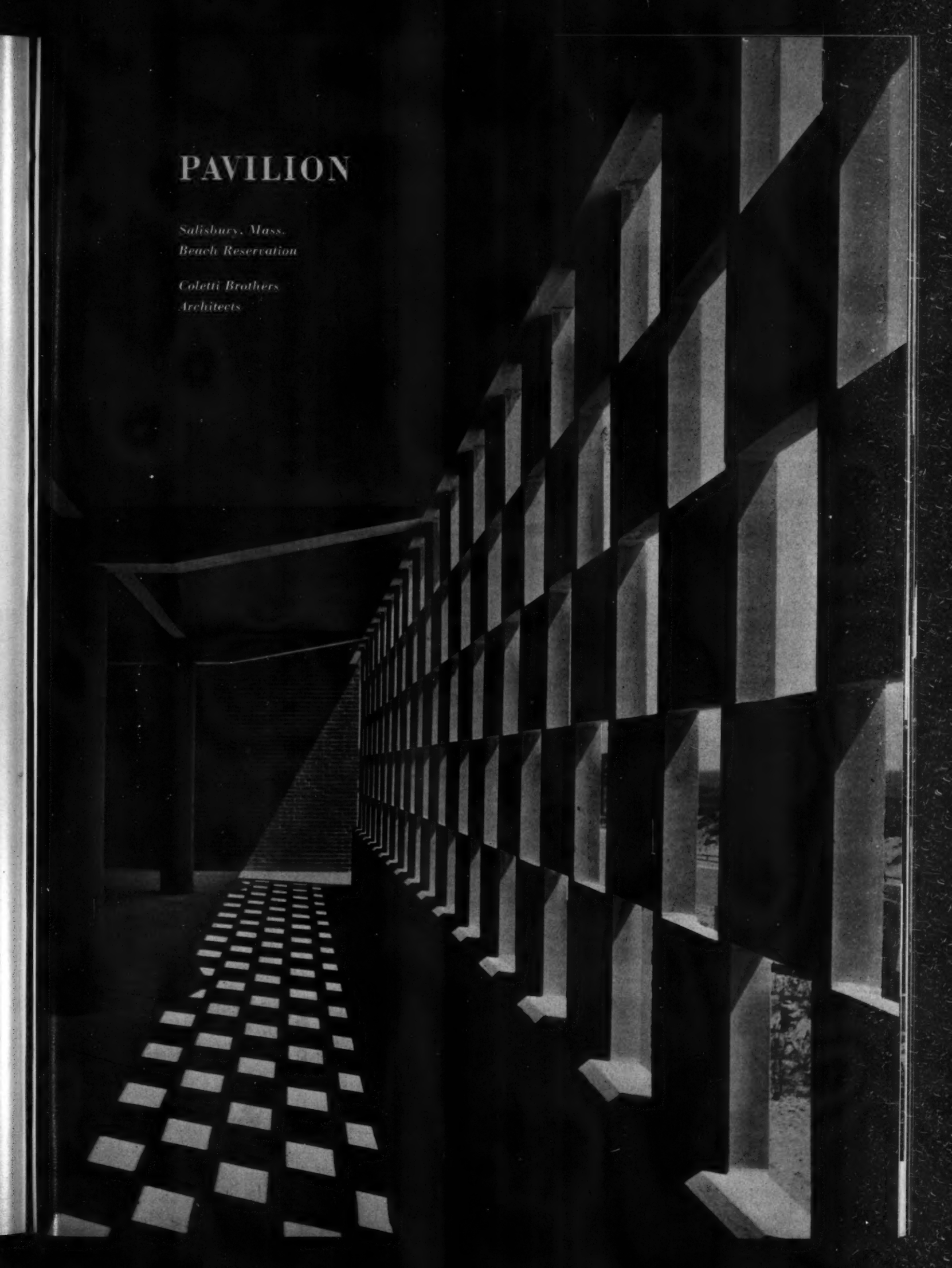
PAVILION

Salisbury, Mass.
Beach Reservation

Coletti Brothers
Architects



BATH HOUSE and PAVILION, SALISBURY, MASS.

Architects: Coletti Brothers. Engineers: E. N. Dube (Struct.), Sullivan & Wright (Mech.), C. W. Rickerd (Elec.)

Letter from the Architects:

SALISBURY BATH HOUSE was a job we enjoyed doing because we had carte blanche in the design and a sympathetic client in the persons of Governor Herter and Commissioner of Public Works John Volpe. The building is the first unit of a beach program conceived by the Governor. Six or seven others are contemplated at various beaches.

"We thought the pavilion should be gay and playful, of rugged materials that would not deteriorate in the salt air. We chose concrete for this reason and because it permitted us to make the design sculptural. We raised the building on stilts so there would be a clear view through it to the ocean, colorful boats, white sails, people, beach umbrellas and the usual beach scenery. The upper level is an observation platform for people who don't care to swim but do want the ocean view and sea breeze and yet would like protection from the hot sun.

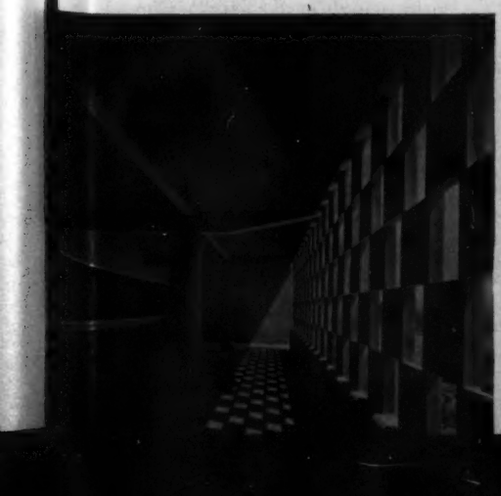
"The Governor asked whether it would be possible for some people to enjoy view, breeze *and* sun at the same time, whether it would be feasible and desirable to open a portion of the roof for this purpose. Hence the open lattice work over part of the roof (see following pages — Ed.) which will not have awnings.

"There are parking areas and a toll house in connection with this whole program; I believe the total cost exceeds a million dollars. The contract price for the bath house proper was $287,000.00.

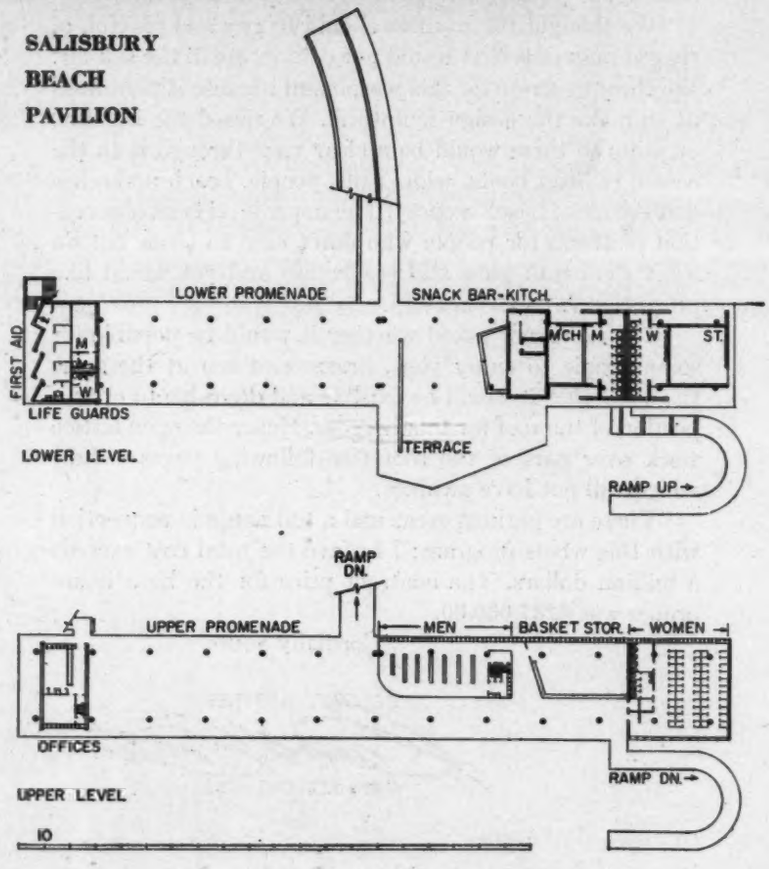
"Cordially yours,

COLETTI BROTHERS

Carroll Coletti



SALISBURY BEACH PAVILION



The administration suite is on the top floor to permit supervision of the entire length of the beach, with first aid facilities at beach level for immediate accessibility. One of the knottiest problems was roof drainage and surfacing. Considering climate and other factors, a built-up roof was selected; the promenade deck, of air-entrained concrete, was left exposed

Above, lower level concession terrace interrupts the long facade. Below, dressing room and promenade, partly lattice-roofed

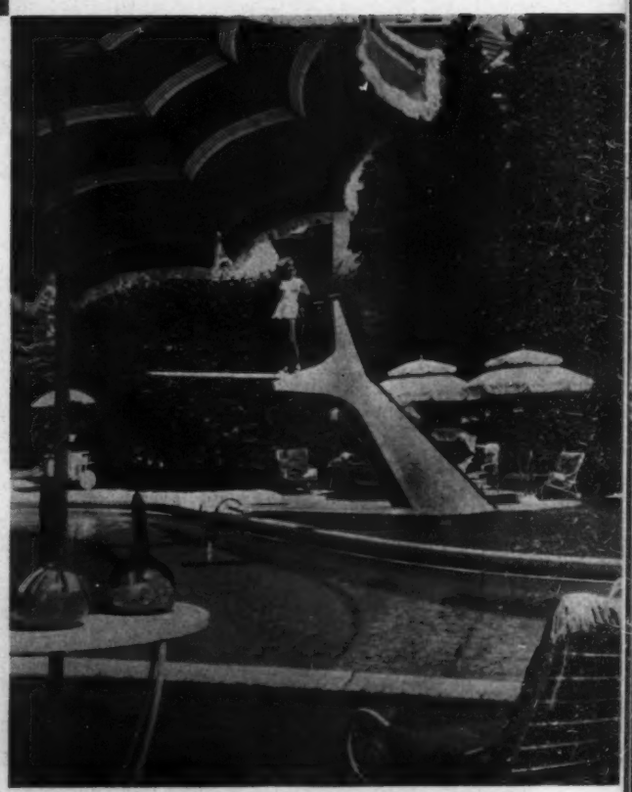
SHAPE AND SCULPTURE ADD GAIETY TO

Giulo Minoletti
Architect

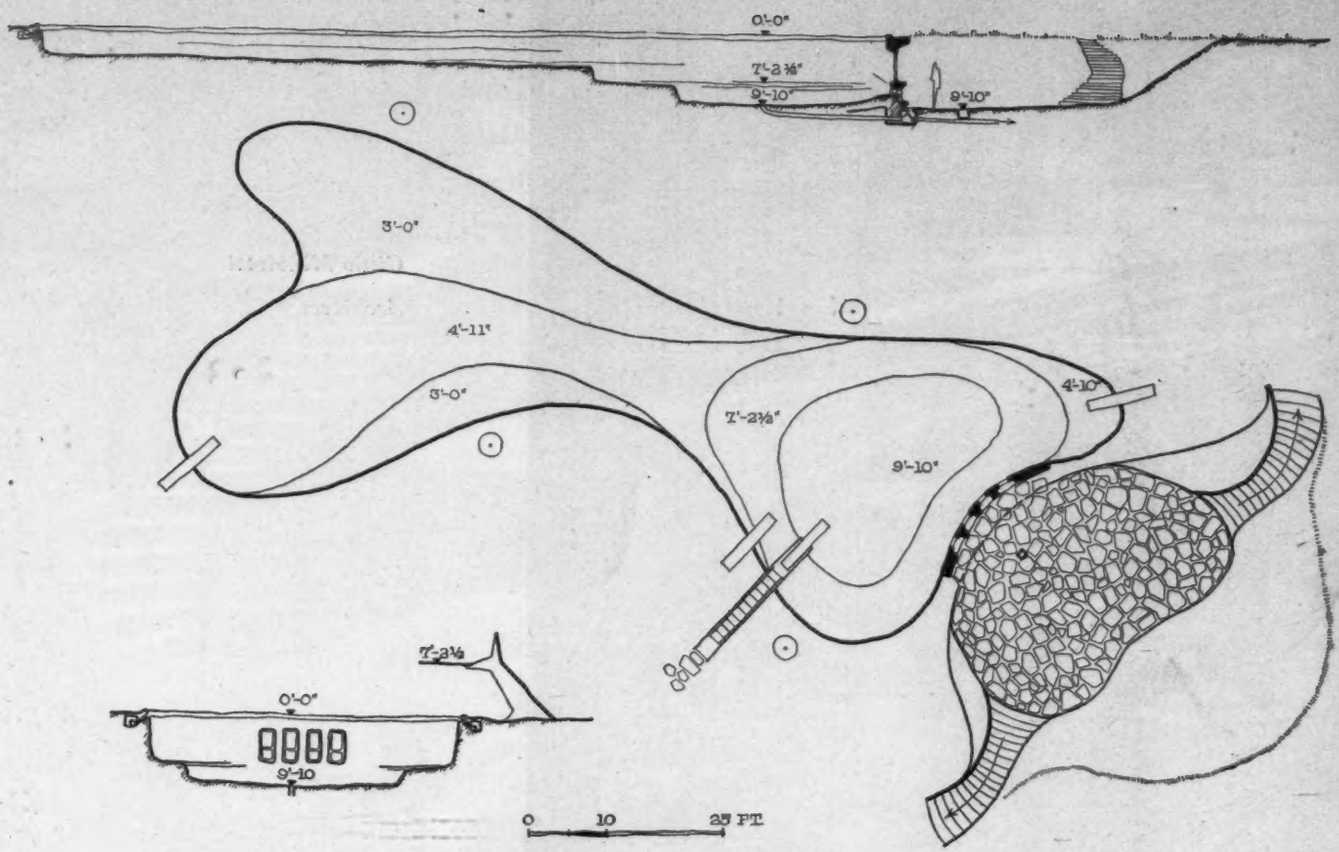
SWIMMING POOL IN ITALY

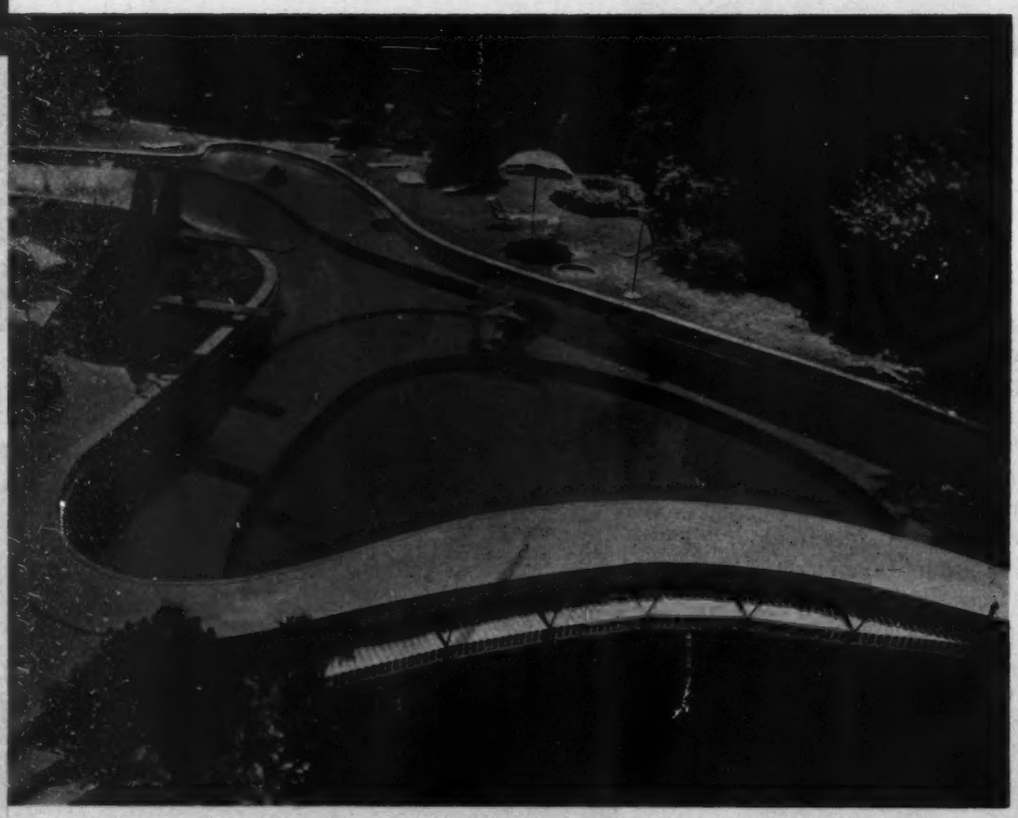
A FRANK SENSE OF FUN characterizes this swimming pool on a private estate near Milan. For the swimmers there are an underwater play sculpture and an exotic diving tower; for the spectators there is a sunken garden from which the underwater antics of the swimmers may be watched through eye-level windows.

The pool itself is curvilinear in shape (see plan, next page), 131¼ ft long and ranging in depth from just over 2 ft to 9 ft 10 in. It is of reinforced concrete construction, with a blue glass mosaic lining which darkens with the depth of the pool. The underwater sculpture, by Antonia Tomasini, is sheathed in multicolor pottery; the diving tower, of reinforced concrete, is finished in a pottery mosaic, yellow on one side, black on the other. At the shallow end of the pool is a fountain by Lucio Fontana — a sculptured dolphin of enameled pottery, 11½ ft long.



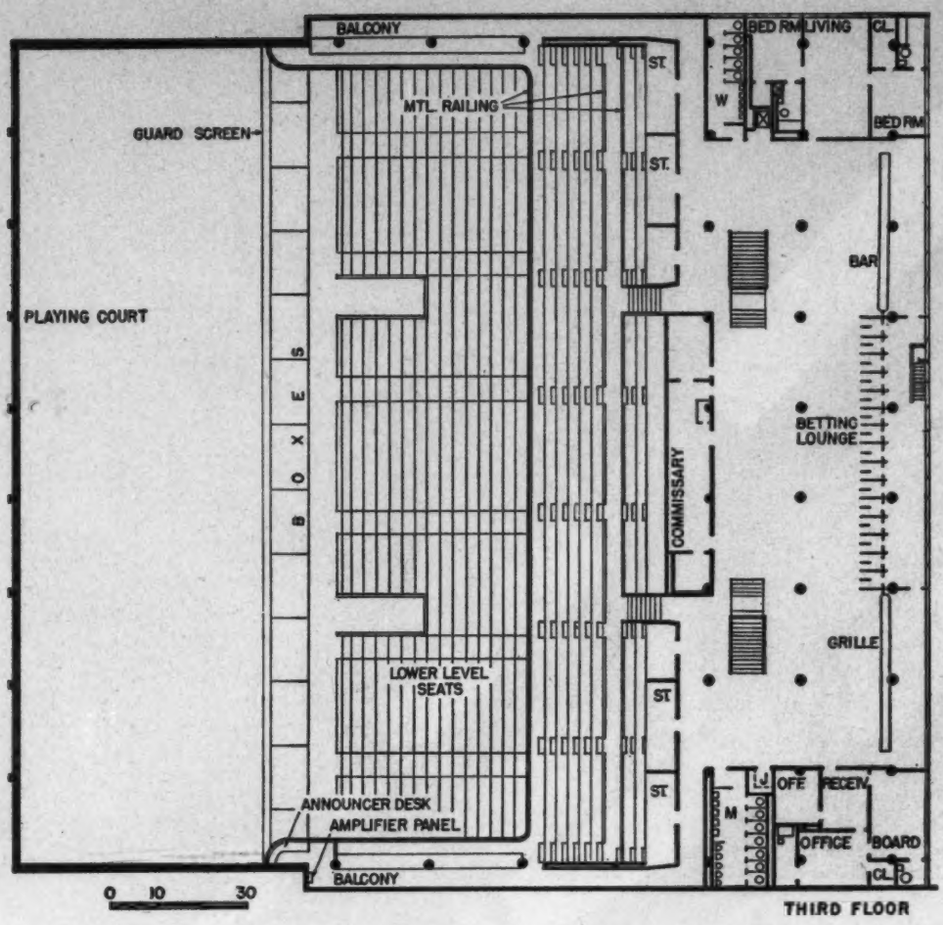
SWIMMING POOL IN ITALY



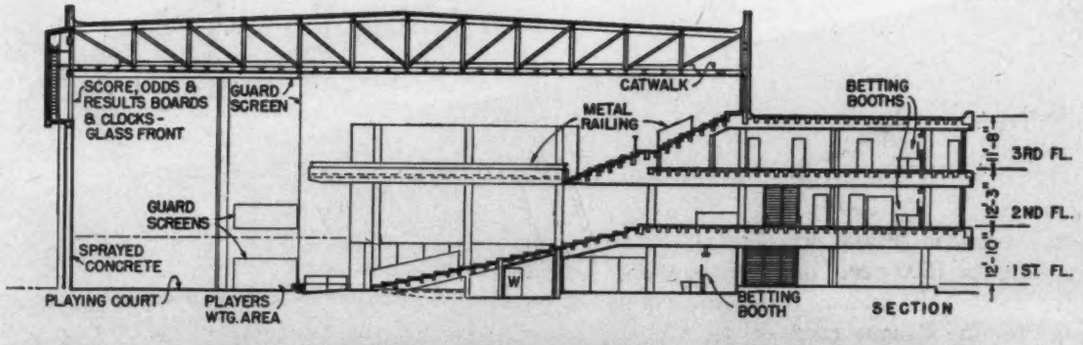


Farabola

FLORIDA JAI ALAI—see next page



UNIQUE STRUCTURE FOR JAI ALAI MATCHES ON



Photos (including p. 181) © Ezra Stoller

FLORIDA'S GOLD COAST

Jai Alai Fronton at Dania, Fla.

Weed Russell Johnson Associates, Architects

Norman J. Dignum & Associates, Structural Engineers

R. L. Duffer & Associates, Mechanical Engineers

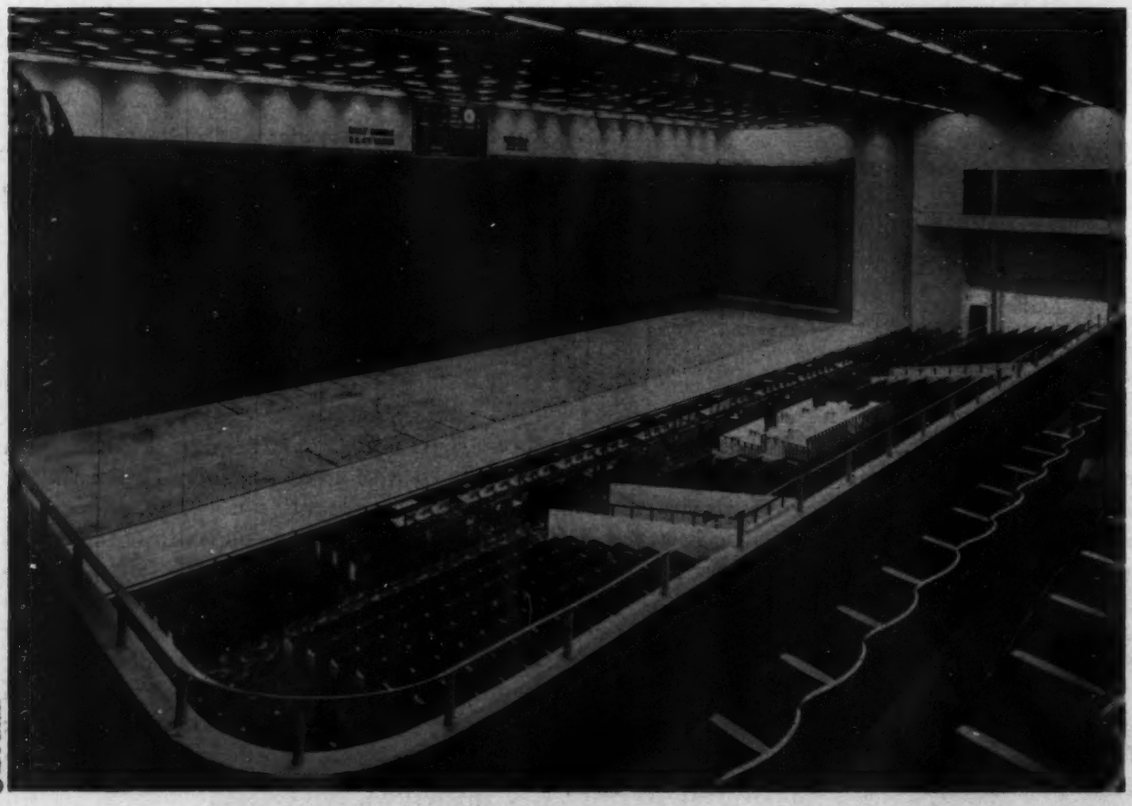
Joseph G. Morretti, Inc., General Contractor

LOCATED between Miami and Fort Lauderdale, with parking for 1500 cars, this attractive building was designed to meet the unusual requirements of a fronton, or court for the Basque game of Jai Alai, popular in Spanish speaking countries. It contains over 3400 spectator seats, 70 windows for betting, a cocktail lounge and restaurant, also overnight accommodations for the athletes. No structure specifically for such a purpose had previously been built in the United States.

Jai Alai, or Pelota, is a fast, dangerous game — played by professionals — in which a small, hard ball is hurled and returned at high speed against the granite end wall of a court floored in edge-grained maple. Each player is equipped with a cesta made of tight basketry which is strapped to his right arm.

The Florida Racing Commission controls the games and the pari mutuel betting system; the latter an important element in the plan. The three betting lounges are designed for viewing the play, and seats are widely spaced so spectators can reach betting windows without disturbing others. The lower level is reserved for club members; has a separate entrance and private lounges; contains an area (at center) with white leather upholstered, low-slung couches and coffee tables.

The design is essentially two intersecting cubes — one white stucco, the other dark red brick. The clean interior space is roofed with steel trusses on concrete beams and columns; enclosed with concrete block either cement-plastered or painted. The 8-in. granite playing panel is framed by canvas covered kapok pads; the court's ceiling and spectator side are screened. This low cost structure was erected in record time — three months — due in large part to the use of U-shaped precast seating tiers and other details calculated to speed up the construction.



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AN ARCHITECTURAL RESPONSE TO ENVIRONMENT

John Pekruhn, Architect

Joseph Spagnuolo, Structural Engineer

Charles Hauck, Mechanical Engineer

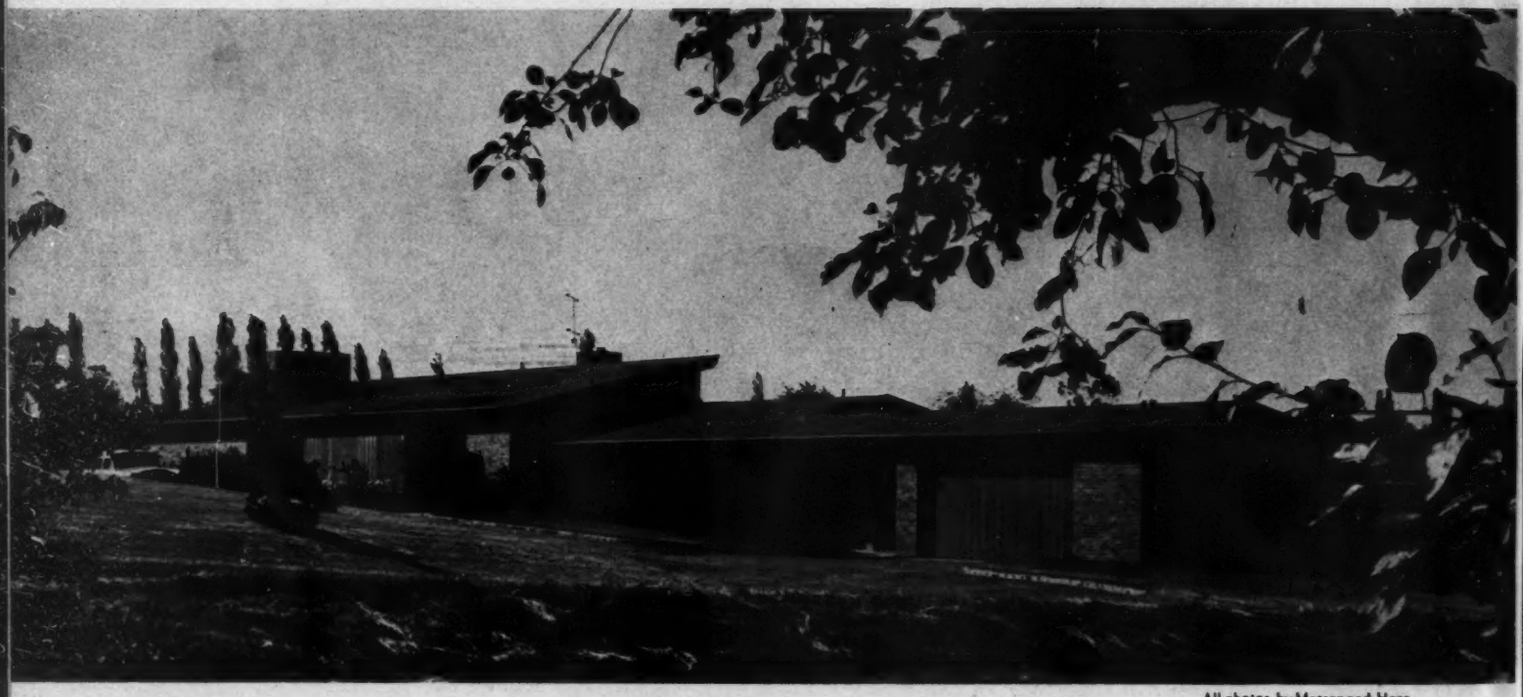
Simonds & Simonds, Landscape Architects

William Schaefer, General Contractor

THIS HOUSE is a remarkably clear expression of five basic environmental influences. The social environment of the community, the character of the neighboring houses, the topography, orientation, and a magnificent view of the Ohio River Valley have been allowed to direct the total form of this house in such a way that its organization achieves an admirable balance between particular influences and general building disciplines. This is not a derivative architecture except inasmuch as its sources can be identified in the conditions and character of the site, the community and its life.

The Neighborhood

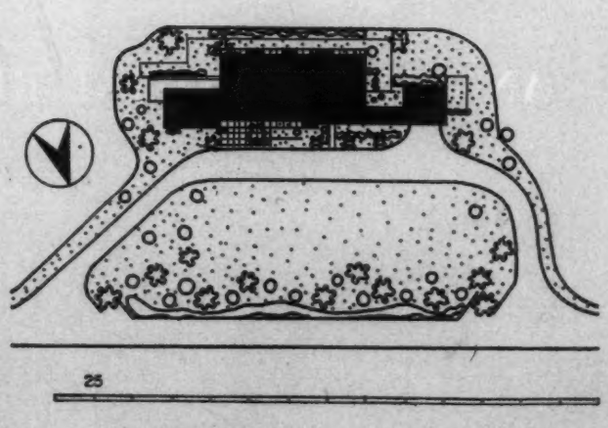
In Sewickley Heights, the life for years has been that of the very rich. From its last century summer-on-the-farm character, it has long since developed into a community of stonewalls and hedges running for great distances along winding roads with glimpses of well-tended lawns under large old trees.

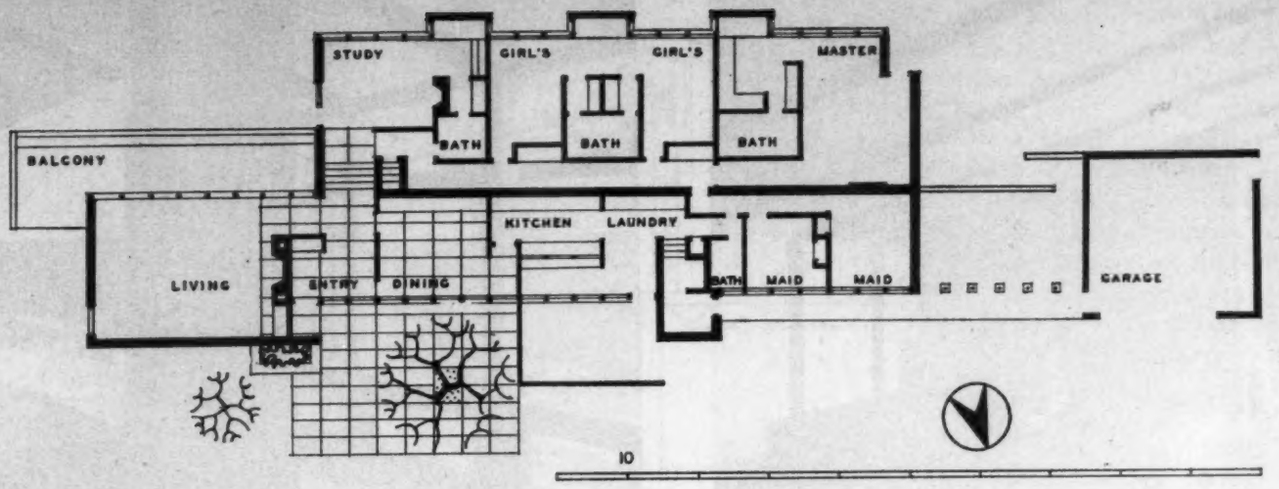


All photos by Massar and Hare

The Site

The character of the community has been protected by a 4½-acre minimum property size and a 100-ft minimum set-back for all property lines. The latter restriction posed a problem in the case of this house, for despite its 15 acres and 500-ft frontage, the site falls sharply away from the road after the first few feet, and it is only from the upper unwooded portion that the broad view of the Ohio River Valley to the south is possible. Hence the house was placed close to the road, kept narrow, and drawn out along the break of the slope.




STUDY
GIRL'S
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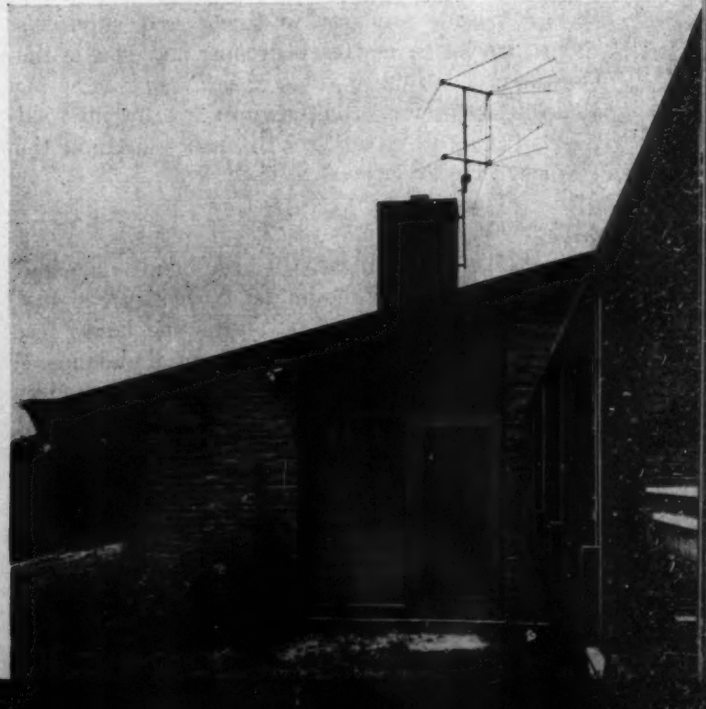


The Family

Two daughters, seven and nine, plus a son by a previous marriage who visits occasionally, constitute the F. J. Tytus family, whose active social life and scale of entertaining require the services of two maids or a couple who live in.

The House

The approach, guest parking and entrance to this house are generous and easy. Circulation from the entry to the major zones is direct, giving great privacy to each zone, notably the living room and the bedroom area.

Particularly noteworthy is the organization of the work area and maids' rooms which are in close relationship to the children's bedrooms; to the kitchen, which is arranged for the maids' sitting space; and to the maids' outdoor kitchen court.

Clerestory lighting endows these rooms with a spacious quality. Bedrooms are toplighted.

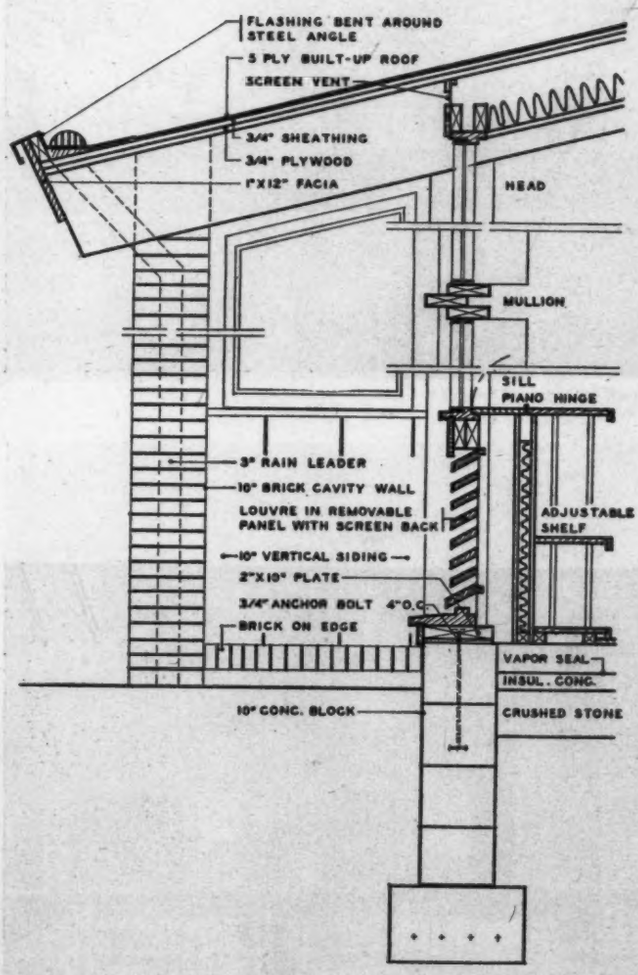
Exterior siding is 10-in. T & G redwood while other exterior woodwork is in fir.

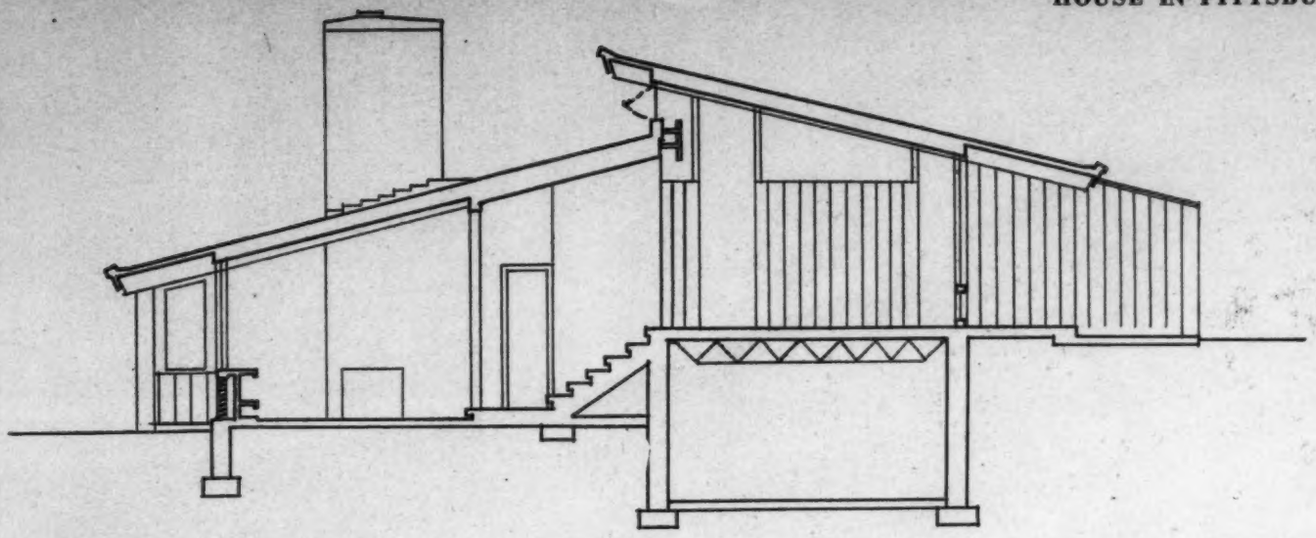
Floors are of brick in the gallery, entry and dining spaces; parquet squares in living and children's rooms; carpet in master bedroom; and plastic tile elsewhere.

Ceilings of all rooms on the upper level are plywood panels between exposed wood beams; plaster in the ceilings of the lower level.

The Architect:

"What I was striving for was a house that had basically the feeling of some of Sewickley Heights' earlier period 'great houses' — the big house feel plus the casualness that goes with an abundance of dogs and sporting gear around; all this combined in a place where a big party, a small dance, a formal dinner, a big buffet, could be held with equal ease and adequacy, yet at the same time a family could live a pleasant small-group existence."



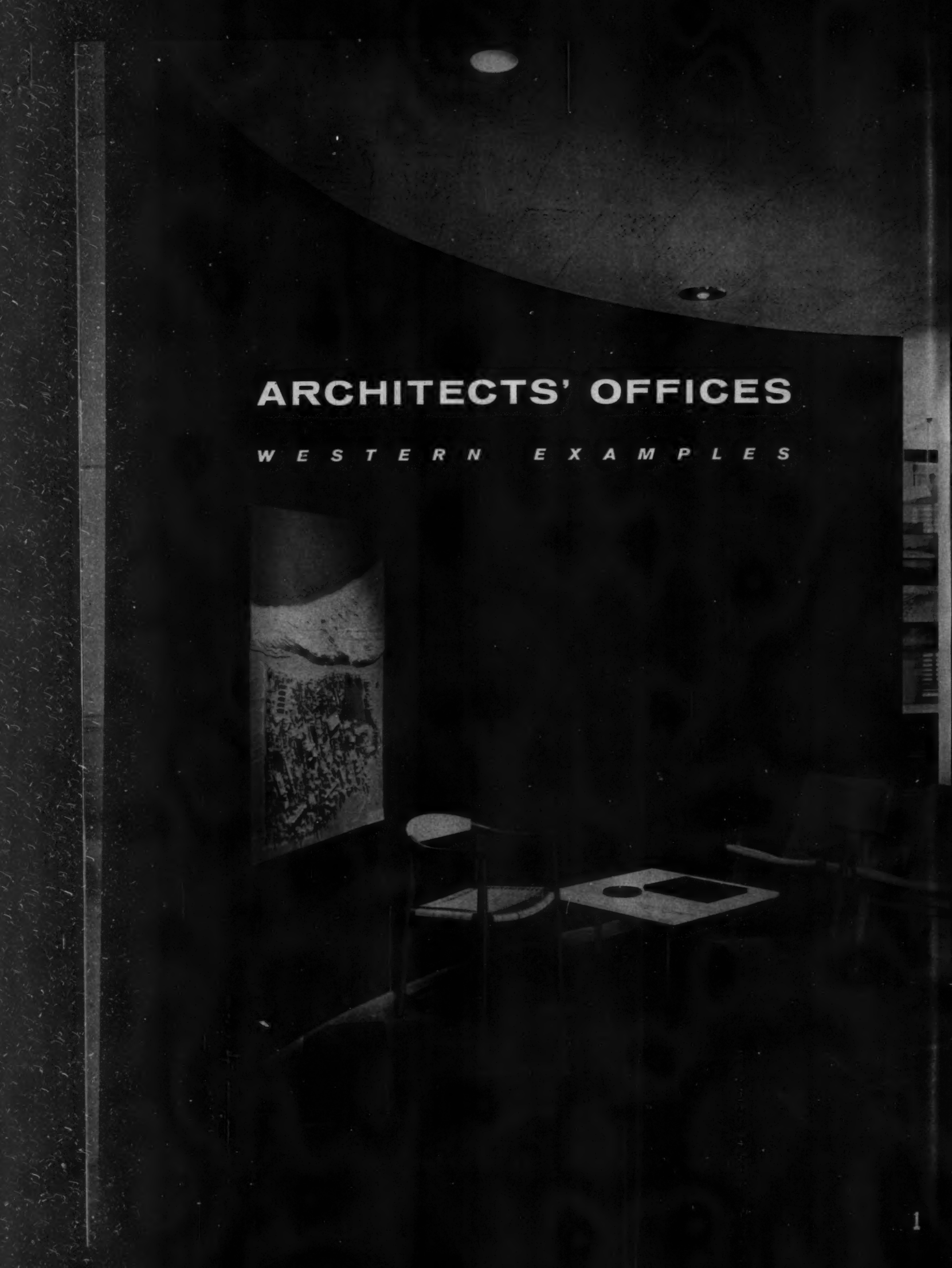


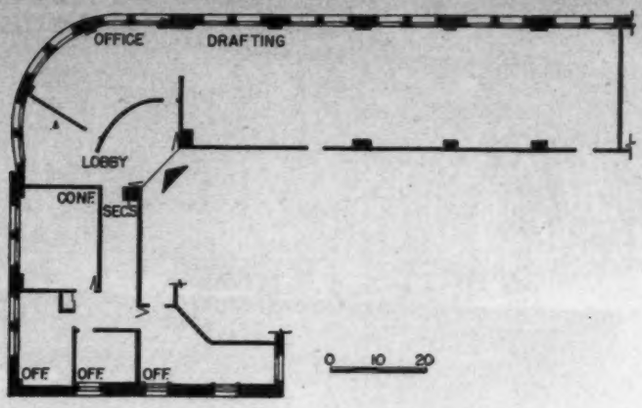
SECTION—WEST

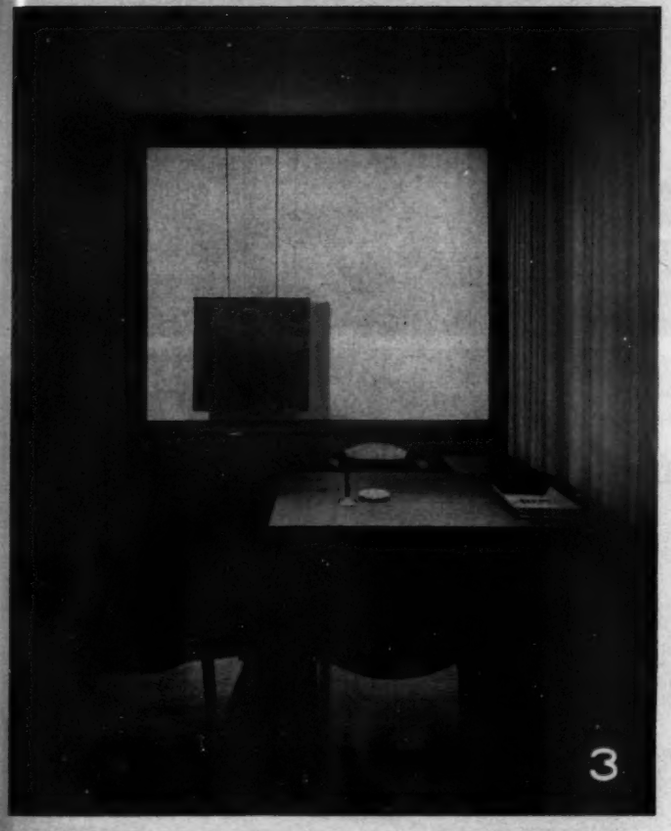
10

ARCHITECTS' OFFICES

WESTERN EXAMPLES







Skidmore, Owings & Merrill, Architects

San Francisco, California

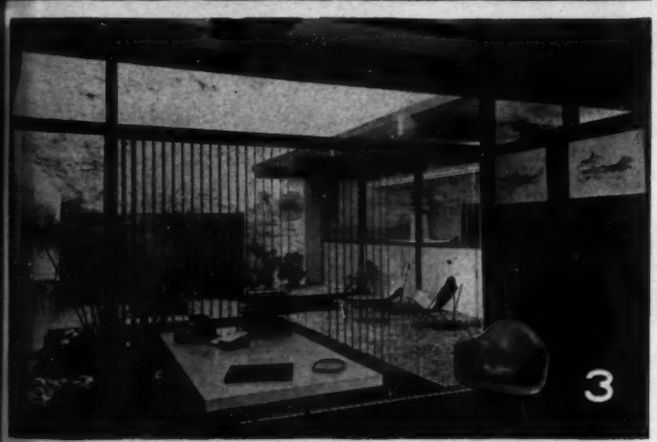
LOCATED at the important intersection of Market, Montgomery and Post Streets in San Francisco in one of the city's best known older office buildings (Crocker First National Bank building), Skidmore, Owings & Merrill's offices are convenient to all parts of the business district. The metamorphosis by which the building's standard office space was transformed into the elegant and restrained atmosphere shown here was accomplished without any real plan changes; essentially, color, lighting and furnishings in natural wood finishes were the means by which the transformation was made. The actual changes made were minor: the entrance doorway from elevator lobby to reception area was widened and teakwood louvered doors substituted for glass doors; one door (from conference room to clerical area) and high windows along lobby wall were blocked off. A wall of louvered doors hides standard double hung windows in the conference room. In private offices, end walls are designed as "tokonoma" (alcove for display of art object, hanging or flower arrangement) with wall cabinets hung below. Desks and tables were designed by the architects.

Morley Baer

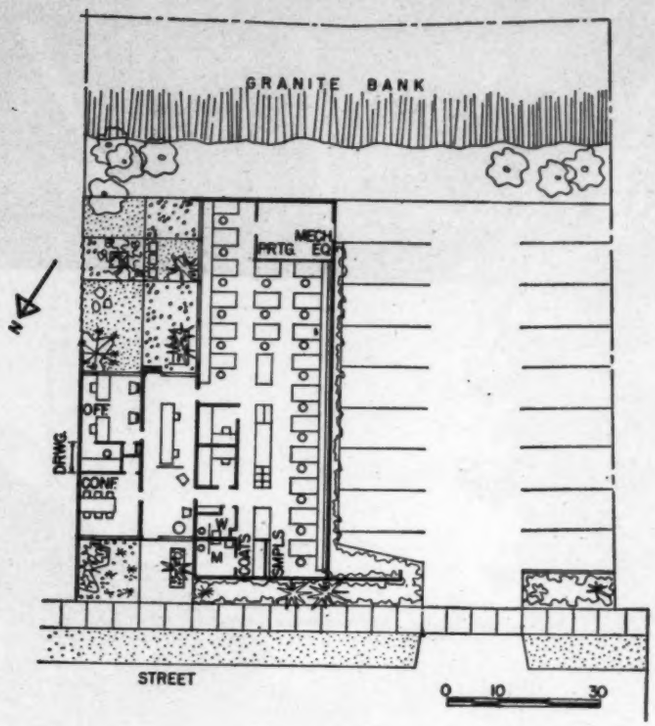
1. Freestanding curved screen in reception area is painted midnight blue; chairs are stock items, table was architect designed. 2. Louvered doors of teakwood screen building's windows; shutters adjust for light. Carpet, upholstery are dark blue-green. 3 & 4. In private offices for John B. Rodgers (3) and Nathaniel Owings (4) "tokonoma" (alcove) is distinctive feature. Trim, furnishings are teak and oak. 5. White marble lobby walls dramatize dark blue screen beyond entrance

1

2



John Hartley



Neptune and Thomas, Architects

Pasadena, California

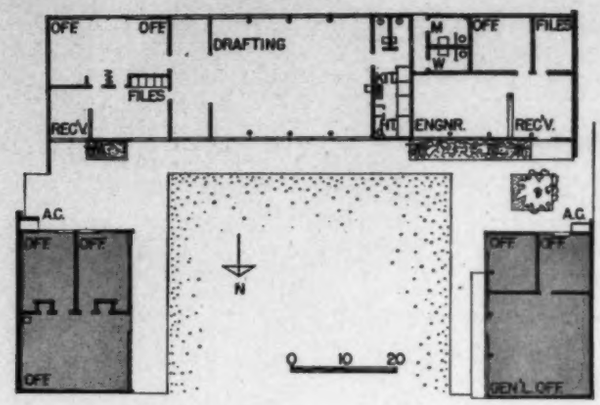
CONSIDERED as a "show window" of architectural service, the architect's office is an important and often invaluable — although silent — aid in client relations. This was one of the reasons which architects Neptune and Thomas felt justified erecting their own office building. Their other reasons, more practical but as important, were the dearth of good architectural office space for rent and the serious parking problem, not only for clients and visitors, but for employes also, in most downtown locations. Their solution to all of these problems was this new building, situated on a main east-west street at the Los Angeles border of the Pasadena city line. The building provides the kind of space they needed and an atmosphere "which indicates to clients and prospective clients the type of architectural service they can expect from us"; a wide frontage (106 ft) makes possible a parking area at one side; the private patio at the rear contributes to the pleasant working conditions which the architects feel a responsibility for providing. Including air conditioning, the building cost $10 per sq ft.

1. *West elevation contrasts open entrance with drafting room's unbroken concrete block wall.* 2. *Terrazzo-paved entrance court leads to glass-walled public areas.* 3. *Architects' office opens onto enclosed landscaped patio.* 4. *From patio view is through reception area to entrance.* 5. *Drafting room is at left, architects' office at right*

1

2

Stuart Weiner



Rental Units shaded

Edward L. Varney • Associates
Architects and Engineers

Phoenix, Arizona

ORIGINALLY planned as a two-story lift-slab building with the architect's offices on the first floor and rental units above, this project developed into a group of single story units arranged around a court. The architect's building in the center of the court was the first to be built; almost immediately an engineer's office was added at one end. The other units, designed for rental, were built over a two-year period. The location in one of Phoenix's fast-growing areas, East Camelback Road, two blocks from a main north-south street, and the pleasant environment of the rental units keep them occupied. The architect's building is steel framed; exterior finish is redwood siding laid vertically, and cement asbestos panels, painted turquoise, under glass panels. Tile fascia, in brown, turquoise and red, is used on all units. The buildings are air conditioned.

1. *Architect's office (right) is in center of court with rental units on each side connected by covered walk.* **2. & 3.** *Rental units are similar to architect's building but smaller. Doors are birch.* **4.** *Murals in clerical area are based on Indian themes, use Indian colors.* **5.** *Architect's office opens onto private patio.* **6.** *Steel frame of building is exposed in drafting room and painted flamingo red. End wall is yellow; ceiling is gray.* **7.** *Architect's office was first unit; extension at right was immediate addition*

Rice paper screen in front of window: Stephen L. MacDonald, architect. Joern W. Gerdts photo

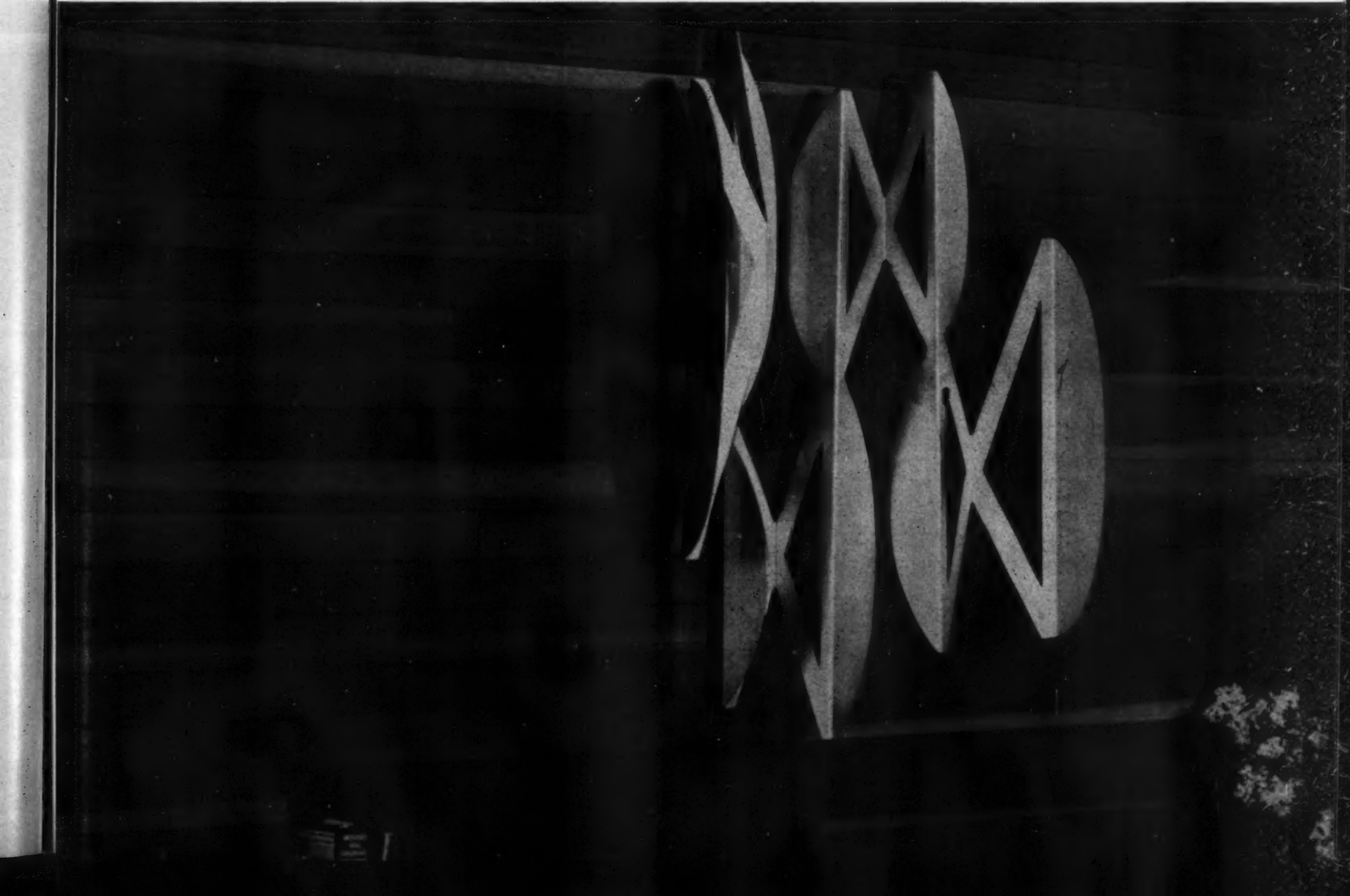
RESIDENTIAL TEXTURES | # WALLS

ARCHITECTURAL INTERIORS

Design | Details | Materials | Equipment

Corrugated asbestos sheeting on wall: Curtis & Davis, architects. Joseph W. Molitor photo

Clear edge grain fir: Charles Burchard and William Lyman, architects. Joseph W. Molitor photo



Ceramic tile mural over fireplace: Curtis & Davis, architects. Ulric Meisel photo

Vertical redwood, varnished: W. Rowe Smith, architect. Biddulph Studios photo

Flagstone in entrance hall: Carl Koch & Associates, architects. © Ezra Stoller photo

RESIDENTIAL TEXTURES | FLOORS

ARCHITECTURAL INTERIORS

Design | Details | Materials | Equipment

Natural cork tile: Curtis & Davis, architects. Ulric Meisel photo

Large squares of slate: George Fred Keck – William Keck, architects. Hedrich-Blessing photo

Precast, prefinished concrete tile: Aaron Resnick, architect. Joseph W. Molitor photo

One-inch split brick: Calvin Straub, designer. Hank Hoag photo

Wood beams and paneling: R. Gommel Roessner, architect. Mears Photography photo

RESIDENTIAL TEXTURES | CEILINGS

ARCHITECTURAL INTERIORS

Design | Details | Materials | Equipment

Yellow corrugated plastic in entry: E. H. and M. K. Hunter, architects. Joseph W. Molitor photo

Industrial cork in kitchen: Stephen L. MacDonald, architect. Joern W. Gerdts photo

Glass skylight over bar in kitchen. Kolbeck & Petersen, architects. Rondal Partridge photo

Wirebrushed redwood tongue-and-groove. Vladimir Ossipoff, architect. R. Wenkam photo

ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NUMBER 227

the NEW HIGH SCHOOLS

SOME educational ideas that have been quietly simmering for several years are beginning to boil. The heat is on; the predicted demand for secondary schools is here. It's good that there are fresh ideas ready; it would be a serious indictment of our abilities if we could do no more than serve up warmed-over versions of the high schools of the 1920's. That was the era of consolidation, if you remember, consolidation in the name of efficiency, because secondary education had become a specialized, compartmented complex requiring huge buildings and a multiplicity of costly items of equipment. Some of the more recent examples have been dished up with a contemporary architectural sauce, though essentially they were little changed.

From time to time ARCHITECTURAL RECORD has sampled the simmering ideas to get some notion of their probable effects on building design (for instance, in Building Types Studies Nos. 196, March 1952, and 224, July 1955). At bottom, there are perhaps three educational concepts; from them others may be considered to evolve and to them factors not strictly educational can be related; all are positive determinants in plant design for secondary schools. The three are comprehension of the importance of the individual pupil as a human being; realization that monumental size alone guarantees neither efficient school administration nor successful educational methods; and an awakening, not yet full, to the dangers over-specialized education may hold for both our high school pupils and our society. There's nothing revolutionary in all this. In retrospect, it is somewhat ridiculous to have expected a high degree of individual pupil development from assembly-line teaching techniques, but that is beside the point. What matters more to conscientious educators is to continue the considerable progress we have made in determining and providing for our adolescents the best possible educational climate, literally and figuratively.

Guiding a pupil through the vast maze of facts on the great variety of subjects with which contemporary education must make him familiar, helping him to develop his own creative abilities and to cooperate with his fellow pupils as he must throughout his life, is scarcely possible when he is one of a couple of thousand adolescents being processed through the same educational mill. Whoever has tried to conduct a seminar knows how difficult it is to work with more than a dozen students. Yet the isolated small high school, as recent history demonstrates, is too much for us to carry administratively or financially; as silly as an army with a general commanding each squad; and the army of secondary pupils is increasing apace. The logical way out of this dilemma would appear to be subdivision of the large high school into smaller units more manageable, more human, more stimulating and less frightening than the monument we built in 1929. Is such a way out more than just an exit? Does

it have positive virtues? Can we retain the advantages the big school had, or must we lose the good as we discard the bad? And, by the way, isn't this merely another justification of "campus" development of the school plant in contrast to the single "big" building? Just what is dangerous about specialized education?

A good many educators argue enthusiastically that far from being a mere exit, the subdivided high school is the best means yet found for achieving the educational ends of a democratic society; that in such a plant improvements on established practices can be instituted easily; that a number of such units grouped under a central authority can retain the advantages of both bigness and smallness. While the educational concept is beginning to take architectural form in many localities as a group of buildings on a campus, this is not its only materialization; Dearborn, Michigan's Edsel Ford High School is a large continuous structure grouped around a series of courts (Eberle Smith, Associates, Architects; *AR* May 1955). In Hagerstown, Maryland's newest high school (McLeod & Ferrara, Architects), now being designed, four such units are being placed under a single roof. Perhaps a comparable scheme can be devised for denser urban areas where high land costs keep sites small, although it is difficult to visualize a massive building in which the component units are successfully individualized.

One of the indications that secondary education needs improvement is contained in the requests from large industrial and business concerns received by such institutions as Teachers College at New York's Columbia University for studying the possibility of deferring specialized education. High development of special skills during secondary years usually means curtailed opportunities for general education or what we have called the liberal arts. Lack of familiarity with fields outside a limited specialty, the businessman says, produces an employe of limited usefulness. If this is true of business and industry, can it be less true of the world at large? Is this one reason for an apparent increase of selfish materialism?

The subdivision of the high school, a unit of 150 to 500 pupils assigned to their small group by chance rather than by special selection, will have a very diverse student body in which each member can develop individually under close personal supervision, and at the same time satisfy his normal interest in the activities of all other pupils. His studies may be primarily vocational, but in receiving his general education he will rub shoulders with the college preparatory student; the program for both expands. In some instances such influences have reshaped the curriculum; in others change comes more slowly, but inevitably there appears to be on the horizon a closer integration of all subject matter. This unification of student body, of learnings and of instructional methods emphasizes a need for a focal area within the small school unit, a room or court for group pursuits, for hunting out source material, for assembling large work projects jointly developed. Even eating *en masse* becomes suspect; lunching in small groups is more compatible with the whole concept, and it can help inculcate better eating habits than the adolescent's natural tendency to bolt his food and run.

A main focal area and adjacent smaller instructional spaces, supplemented by conference rooms, storage space, sanitary facilities and the like, is exactly the form these units are taking. The pupil uses his own unit most of the time. Only for activities too noisy or requiring special facilities too expensive to duplicate repeatedly need he leave his own small school: for portions of his physical education program, for intensive shop training, for instrumental music and the like.

Many problems posed by our times can be solved by this kind of an approach. There is a teacher shortage; the small school can conceivably employ a faculty consisting partly of fully qualified teachers and partly of aides or teachers-in-training. Human size, scale and proportion, widely discussed in this and other publications as being architecturally desirable today, are natural attributes of these less pretentious buildings. Construction costs are high and budgets low; enough contracts have been let for the new schools to prove that costs can be kept down without impairing quality. The group of small structures affords excellent opportunities to capitalize on the qualities of a particular site and locale, its microclimate, the nature of the community of which it is a part, etc. Such a group can be built piecemeal to accommodate a growing pupil load without undue sacrifice during initial phases of a program.

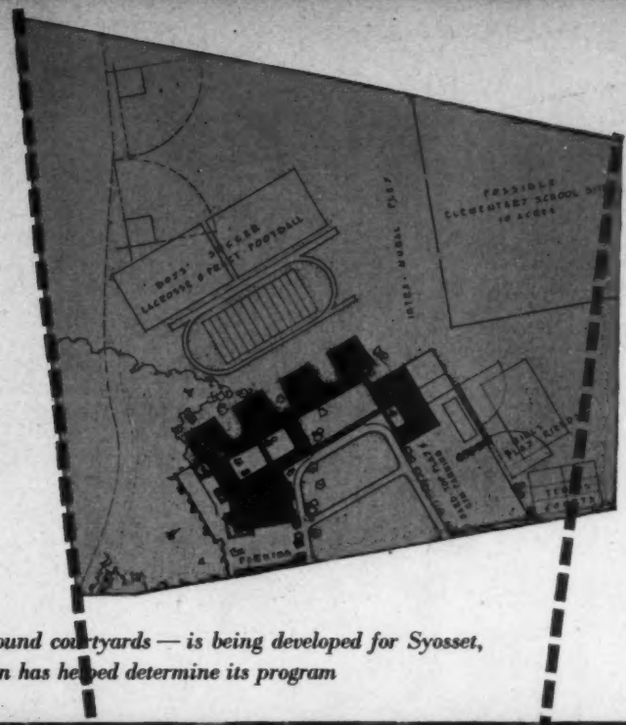
Schools of this kind have been called "little schools", "schools within a school", even — ponderously — "learning units". None of these titles is quite right, so we have purposely avoided them. Whatever they are eventually called, in the following pages are several examples, all different in degree of application of an underlying idea and as diverse as the pupils who occupy them.

— *Frank G. Lopez, A.I.A.*

NOT-SO-PUBLIC RELATIONS

A report on architect response to opportunities afforded by the White House conference on Education, to be held in Washington, D. C., November 28 – December 1, appears on page 15 of this issue.

NEW HIGH SCHOOL FOR A MUSHROOMING SUBURB

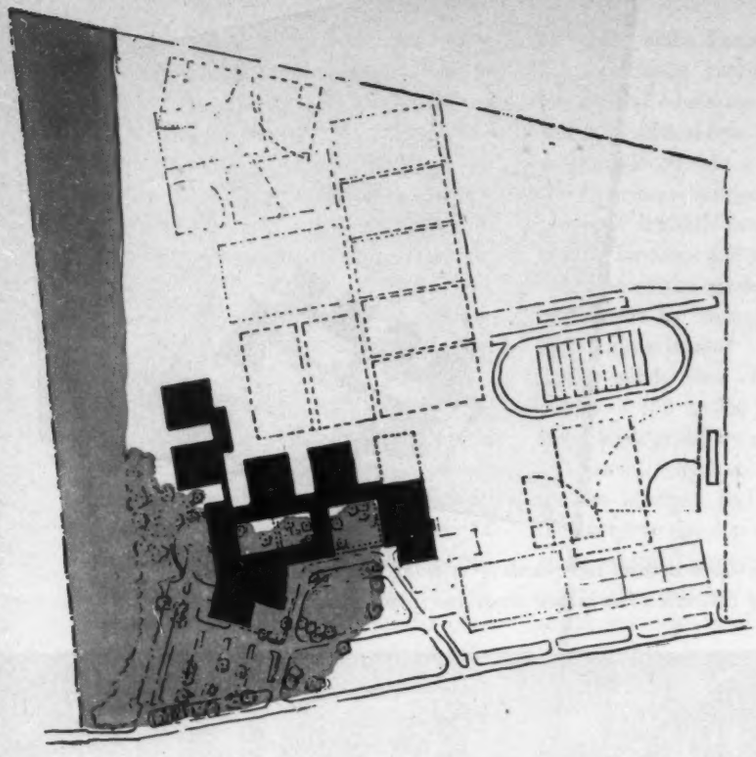


Eggers & Higgins, Architects

Engelhardt, Engelhardt & Leggett, Educational Consultants

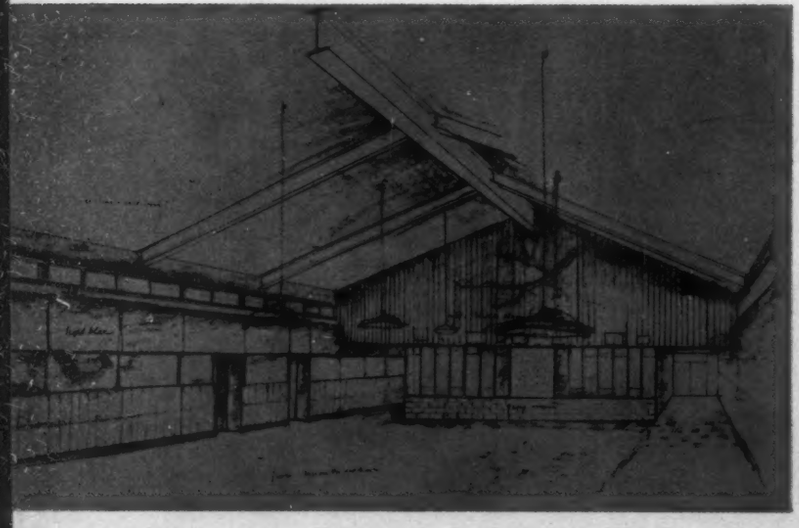
A new kind of high school — little schools grouped around courtyards — is being developed for Syosset, New York. The Fund for the Advancement of Education has helped determine its program

Fairchild Aerial Surveys



Above is final site plan for Syosset's new high school. Preliminary site plan on preceding page was prepared for the brochure distributed prior to the bond election; earlier the school had been programmed by a capable group of consultants, administrators and citizens

Early study, for a project room in one of the Little Schools; see plans on following pages



LITTLE SCHOOLS AND

by R. Jackson Smith, Partner,

SYOSSET HAS AN AREA of approximately 15 square miles near the North Shore of Long Island, and lies about 25 miles east of New York City. The school district includes the three unincorporated villages and elementary school districts of Syosset, Woodbury and Locust Grove. In 1940 its 350 elementary school children went to the Split Rock, Locust Grove and Woodbury Grade Schools. Some 150 high school students traveled to nearby Oyster Bay, Huntington, Westbury, Hicksville, and Glen Cove.

After World War II, as the rush to the suburbs gained momentum and fertile potato farmlands and wooded estates gave way to bulldozers and development builders, the district found itself with a skyrocketing population — from 2500 to 12,000 in 10 years — and, by 1955, with 3000 public school pupils. The postwar baby tide was met by adding to one elementary school and hurriedly building five new grade schools. And in 1953, when neighboring high schools burst at their seams and were forced to withdraw their commitments to take tuition-paid, out-of-district pupils, the need for a central high school was forcibly impressed upon Syosset board members and citizens.

A centralization referendum in June 1954 was passed by a conclusive vote, and a nine-member central school board set out to solve secondary school problems. Inevitably these involved a determination of the educational aims of the district and a program of requirements.

Convinced that an analysis of educational aims had to be made before an

THE QUADRANGULAR PLAN

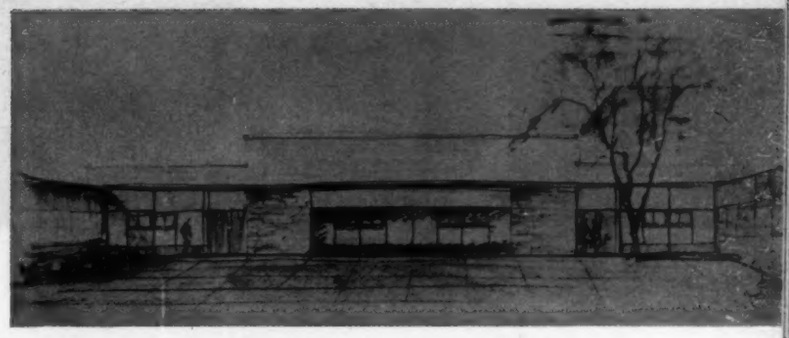
Eggers & Higgins, Architects

architect could be engaged, the Board selected a superintendent, Dr. Ernest F. Weinrich. The Fund for the Advancement of Education, an offshoot of the Ford Foundation, became interested; two of its most able secondary school men, Dr. Lester Nelson and Dr. Burton Fowler, with the new district's new Superintendent and Assistant Superintendent, Frank Manarel and a group of citizens, worked several months on a curriculum for the unbuilt Syosset High School.

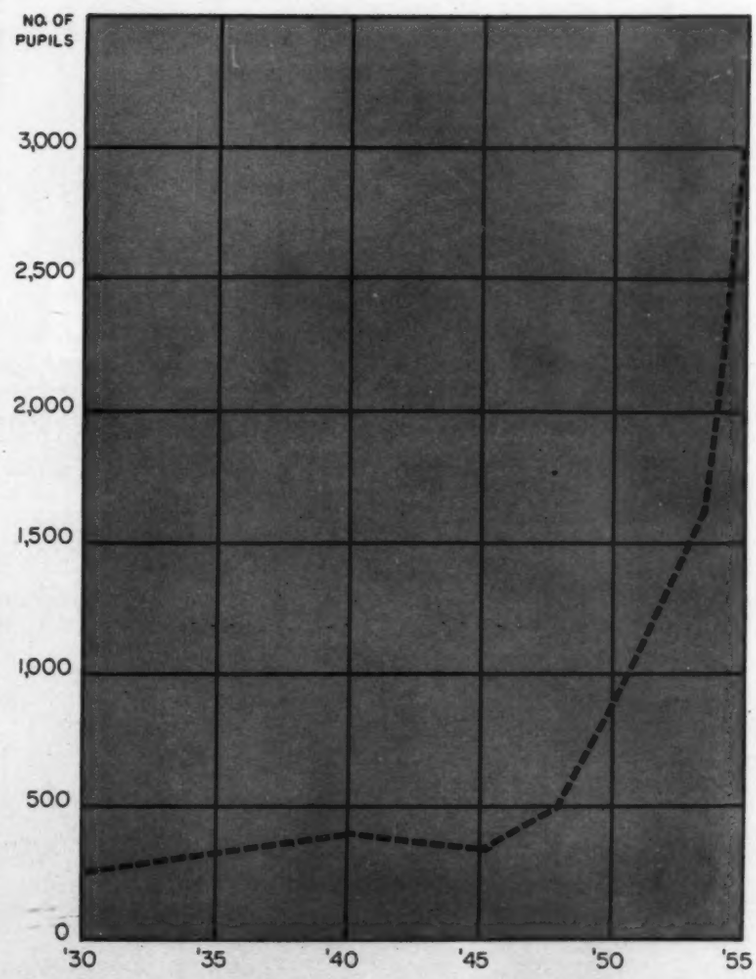
Added to this team early in 1955 were the educational consultants, Engelhardt, Engelhardt and Leggett, whose experience enabled the team to save many valuable weeks in the process of summing up and coordinating data supplied by citizens, and in compiling a clear concise program which stimulated an imaginative design approach.

In April 1955 we were commissioned as architects by the Board of Education and sketches for the proposed school were commenced. We developed three alternate schemes; of these, the one based on a series of quadrangles and incorporating the "little school" concept was accepted by the Board of Education.

In early planning discussions with the Board we established several premises. Since the 73-acre site was generally flat and had a heavily wooded 6-acre tract at the southeast corner, it was determined that the building would be located in the wooded area, leaving the flat farmlands for athletic fields. This would permit saving a selected number of large specimen oaks to shade the building and would reduce the visual importance of parking areas. Further site considera-



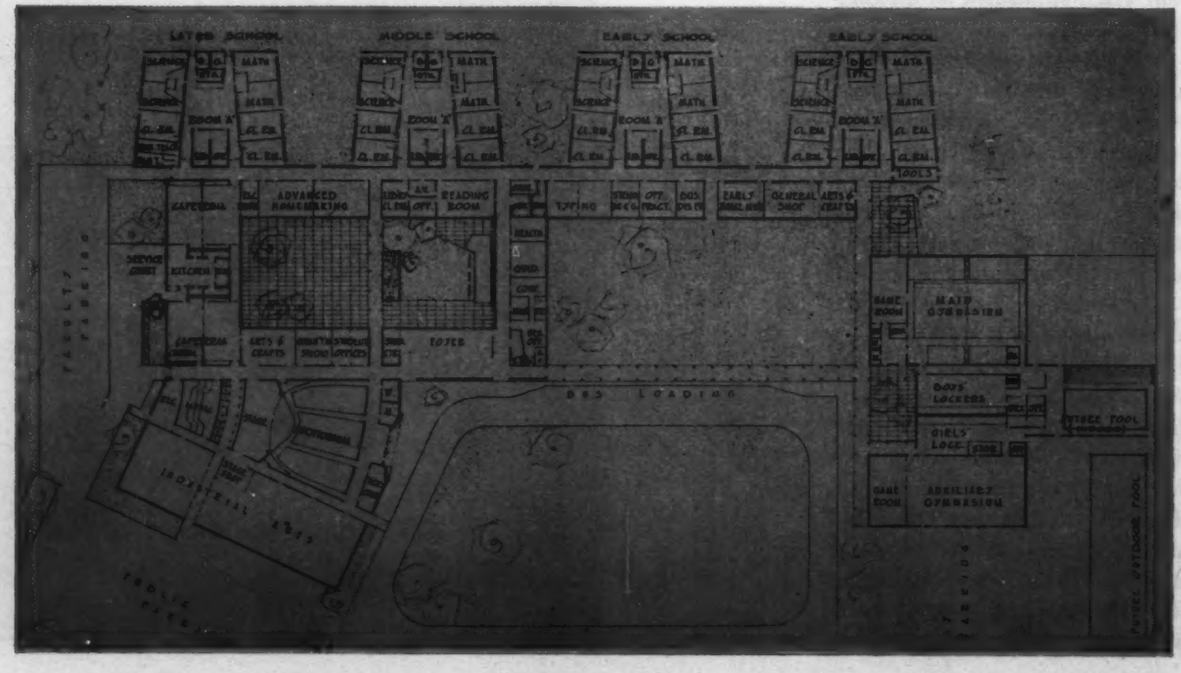
Another early study, Quadrangle "A," facing the high school's cafeteria



PUPIL GROWTH CHART, KINDERGARTEN THROUGH GRADE 12

Three of the several phases through which the plan of Syosset's new high school has passed are shown here: above, a preliminary scheme like the one the Board approved; below, as it had been developed by the time the brochure was issued; facing page, final plan. Numerous public hearings afforded opportunities for full discussion of the program, size, capacity, virtues of the spread-out plan versus multi-story, etc., before the bond issue was favorably voted

Fairchild Aerial Surveys

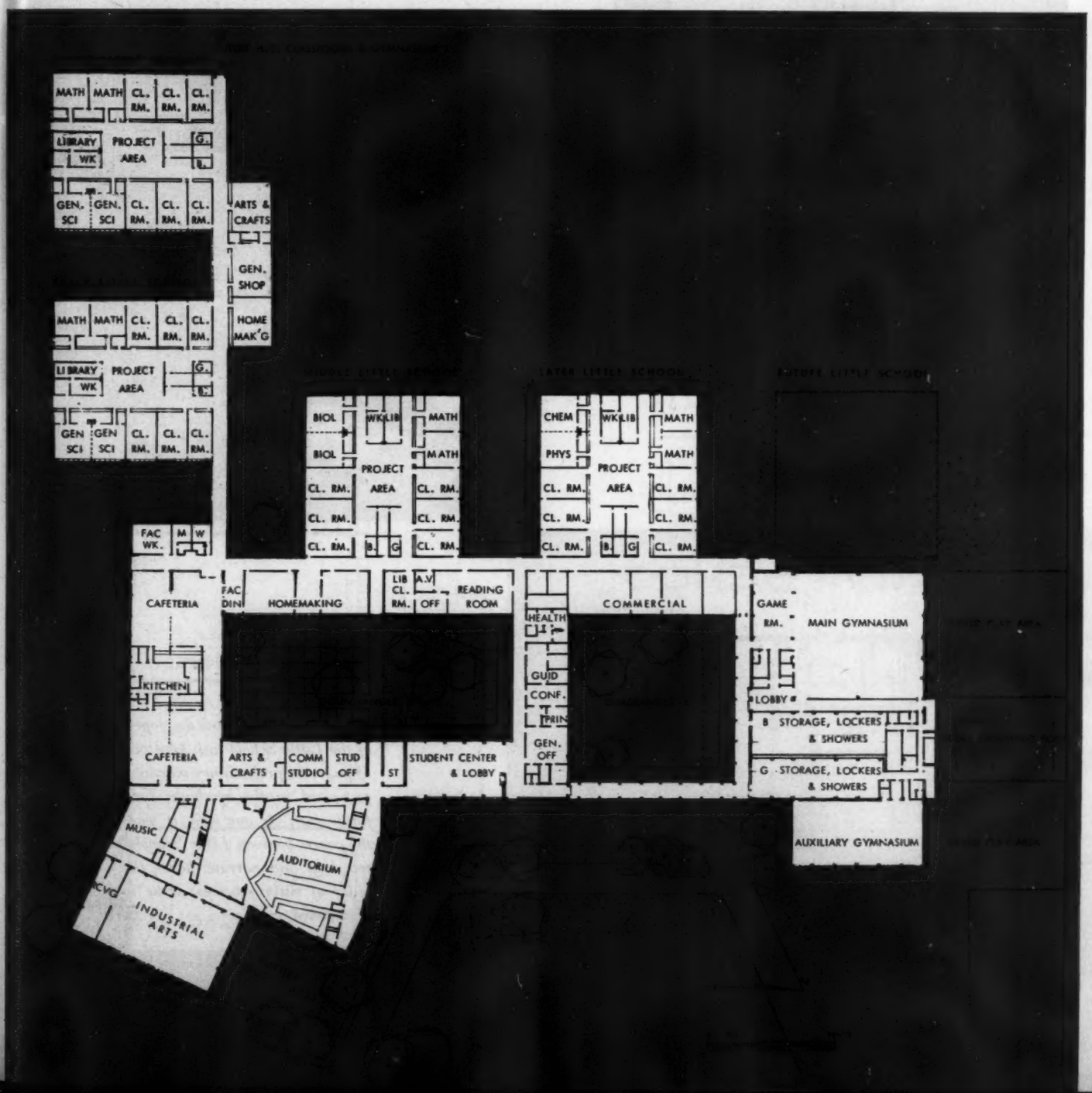


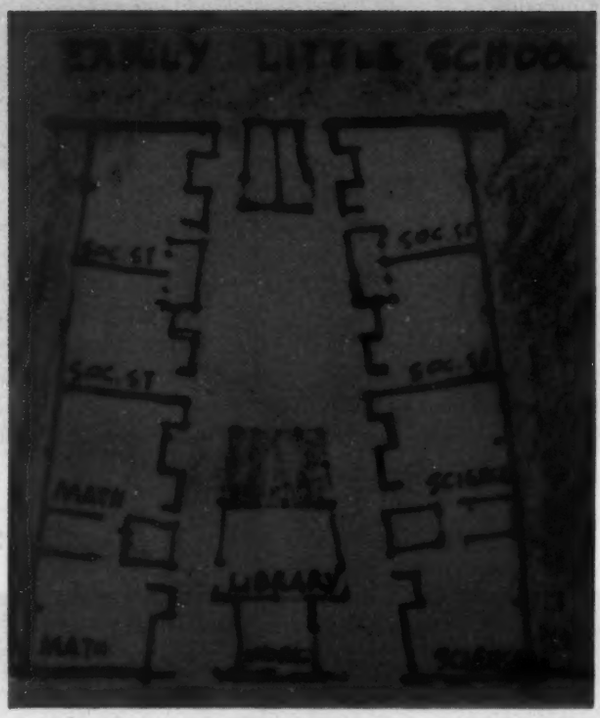
tions were the impending construction of a north-south Long Island parkway adjacent to the southwest corner of the site, and a desire to limit the length of approach and delivery driveways.

In retrospect, even so soon after the event and in the midst of our concentrated effort to produce drawings and specifications — the job is to get out for bids at the earliest possible date — it is hard to believe that as much was accomplished as actually did get done in those recent early days. The citizens had to be informed and convinced of the validity of our proposals so they could vote intelligently on the question of a bond issue. Before July 1 (we had been engaged in April!) the "brochure" scheme illustrated was drawn up and sent to press, and the bond issue campaign was on.

The little school idea as developed by the program and planning team had captured our imagination. In a secondary school where 1000 to 1500 students in grades 7 through 12 would be housed for several years, where, later, the enrollment might exceed 2000 senior high school pupils, the idea of limiting school groups to 300–400 had great appeal. It also became more and more apparent in discussions with the Board and with citizens in the community that the little school plan offered great flexibility because it permitted both easy expansion and the use of a unit for lower grades if necessary.

After a series of meetings throughout the community the bond issue was approved. A concentrated three-week series of meetings was then held with the team, the Board and the Citizens Advisory Committee. Out of these meetings came the final plan for a 4-unit, 1760-pupil, expandable high school. Future addi-



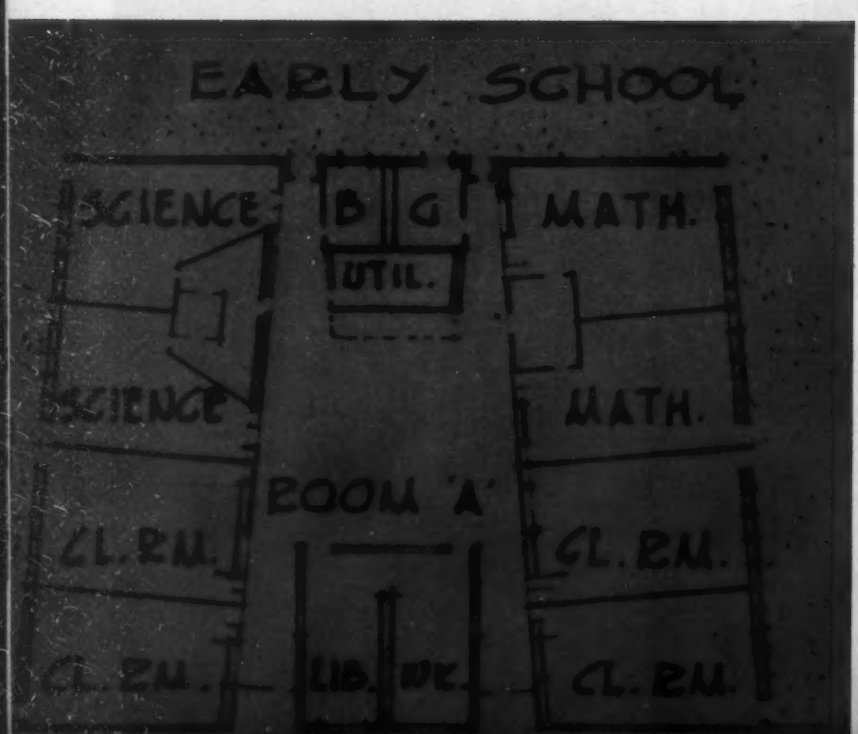


tions, for which provisions have been made in the plans, include: **a**, two additional little schools; **b**, an additional indoor physical education wing; **c**, a 40 by 75 ft swimming pool with spectator space for 400; **d**, additional industrial arts shops; **e**, additional commercial education rooms.

The little schools are the heart of the Syosset plan. In contrast to the buildings of a departmentalized high school, whether it is designed as a campus group or as a single large structure, each Little School is a unit which contains educa-

Fairchild Aerial Surveys

NEW SUBURBAN HIGH SCHOOL



As the total scheme was developed the plan of the Little School unit kept pace: at top of page, the preliminary scheme; left, plan presented in the brochure; facing page, final plan. At one time it was felt that the courts between Little Schools might be too deep and narrow, hence the splayed sides of early schemes; these were later abandoned

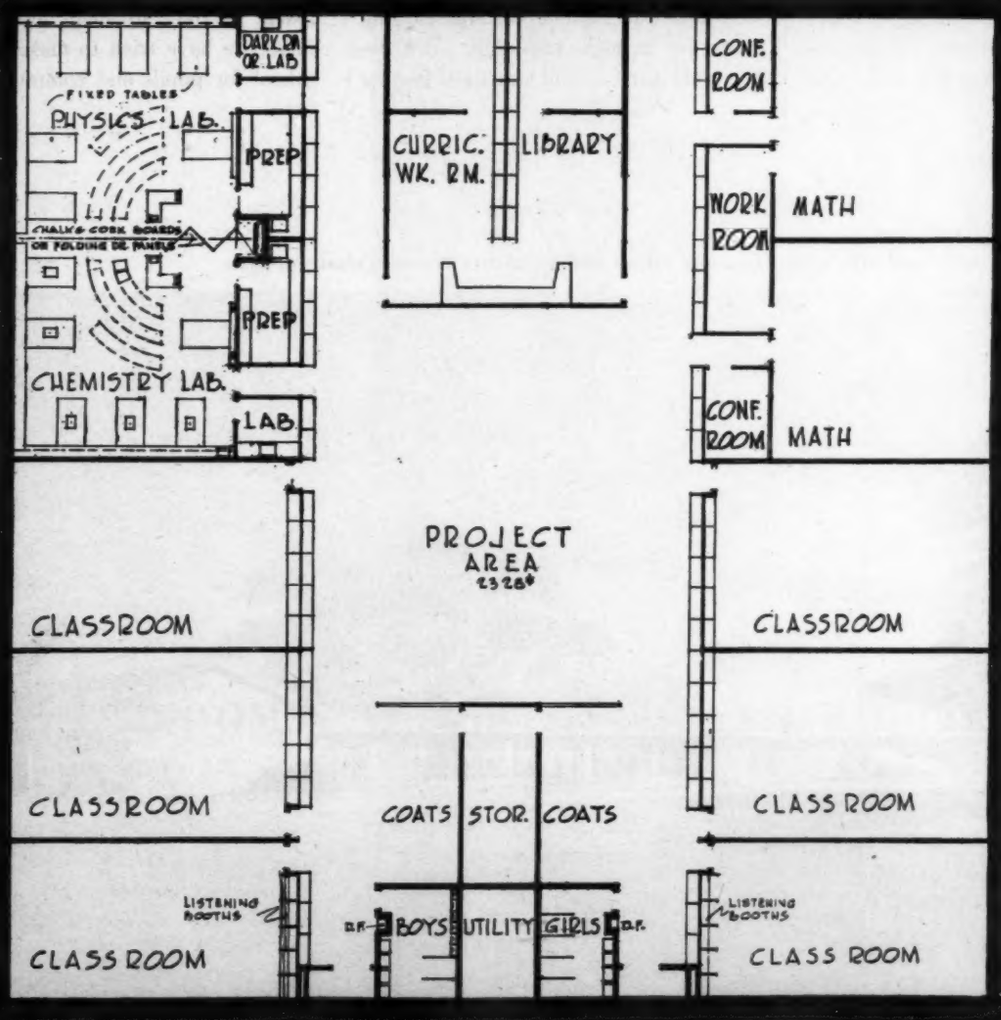
tional spaces where 300 to 400 pupils may be expected to spend a large part of the school day. Each unit will have two science labs and two mathematics labs, in addition to six interchangeable classrooms for general academic subjects.

In the center of each Little School, the 45 by 50 ft Project Area serves as a multi-purpose space where students will meet, work, and pass each other as on a traditional New England village green. The walls will be lined with keeper lockers up to 4 ft 6 in. above the floor, with glass and display space above. The floor will be asphalt tile, walls will be masonry, wood panelled at the ends. The ceiling will be acoustically treated.

At the entrance end of each Little School there will be toilet, utility and coat rooms. At the open end will be located the Little School library and the curriculum work room. The library will contain reference books and special study books, and will operate as a branch of the central library. The curriculum work room will operate as a central planning area for faculty coordination of subject material and study projects within the Little School unit. The science lab and lecture rooms will have a common preparation room and will be divided by a folding door to permit both large lecture groups and smaller lab groups. Individual student science projects may be carried out in separate small labs.

Serving the Little Schools will be a number of special areas, accessible to the units by covered and open passageways.

Physical educational facilities for all



the students were required by the Citizens Curriculum Committee report. The five-teacher-station physical education plant is located for easy access from parking areas, with direct access to outdoor playing fields. The locker plan is based on "wet" and "dry" circulation to the gymnasium areas, as well as to the future swimming pool. Locker dressing spaces will be of the class-cage type, with individual storage lockers for each student. Provision is made for extensive intramural and varsity athletic programs. In addition to dressing areas, there are spaces for coaches, equipment issue and drying, laundry, and towel-issue rooms.

The 600-seat cafeteria is divided into two rooms, one either side of the kitchen, to permit four serving lines and a central dish-return alcove. The double cafeteria permits smaller eating groups, lower ceilings, and multi-use of the space. Each of the dining spaces may be divided by a folding partition providing a total of four areas for such uses as study, chorus, art projects, assemblies and student activities.

There are three shops in the Early Little School Work Center, where pupils can develop proficiency at art, crafts, cooking, sewing, planing, sawing, drilling, sanding, painting and other basic work-arts.

Business education will be offered at Syosset in 2 typing rooms, 1 stenography and bookkeeping room, 1 office practice room and 1 business and distributive education room. Centrally located to serve all of units, special areas and the the public is the administrative wing.

Of greatest importance in the Syosset story, perhaps, is the effect of its educational philosophy on its architectural design. The concept of building impressive pieces of architecture and pushing students through imposing entrances into dark tunnels and stairwells leading to stacked, beehive-like classrooms is conspicuously missing in the Syosset plan. No corridor, as such, extends very far without opening into a windowed area. No student need feel engulfed by his surroundings.

The Little School concept and the Quadrangular Plan offer the architect an opportunity to design spaces for students at a suburban scale rather than at the scale of the large city and the crowded block. They do away with the type of planning which fits small boxes into larger boxes, and then stacks them in tight piles.

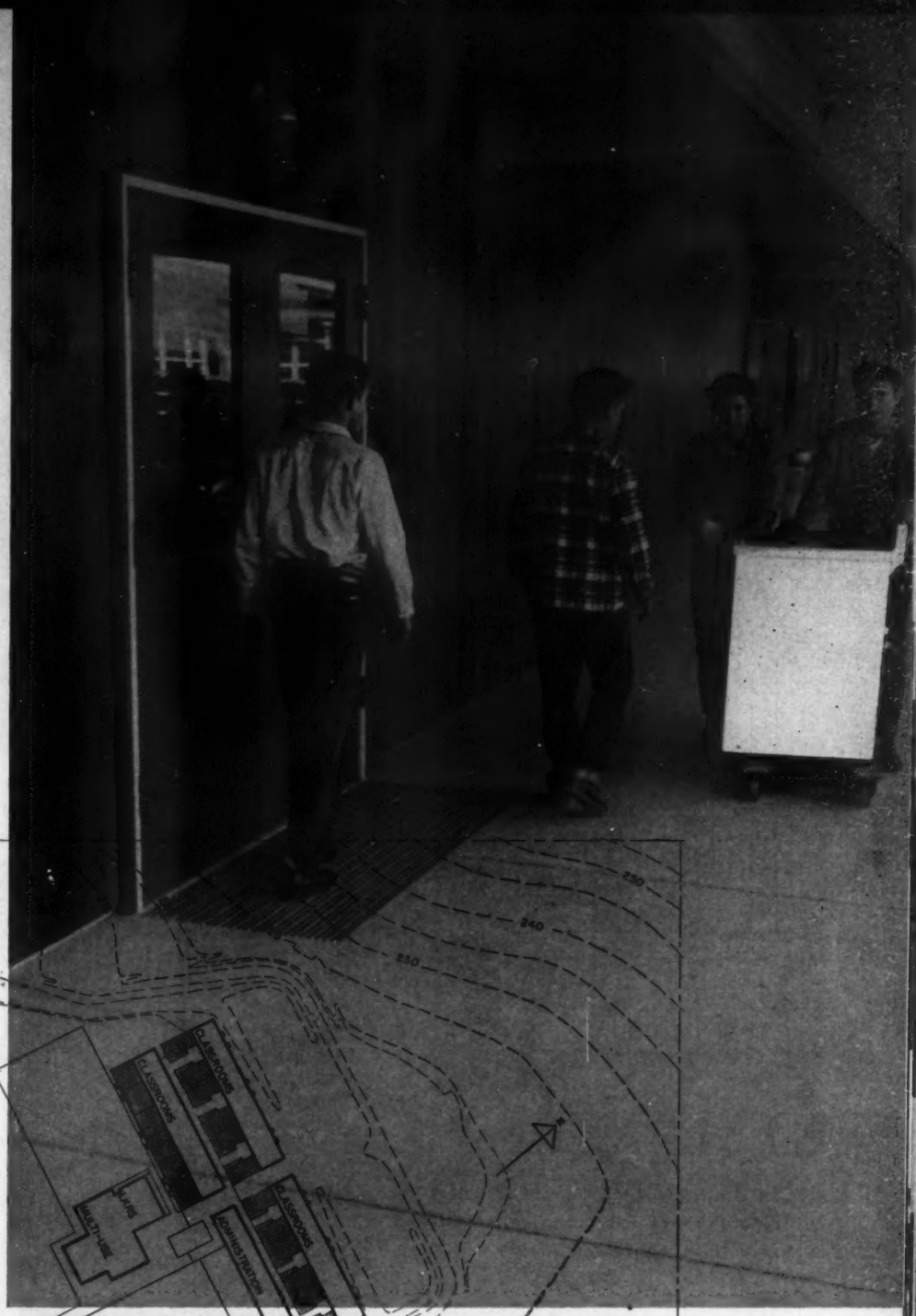
The Syosset High School will be light, pleasant, warm and friendly. Trees and planting around the buildings and in the quadrangles will be an important part of the plan. By taking advantage of everything at hand, from such tangible assets as trees to such intangibles as ideas, we have tried to make it a good school for pupils and community.

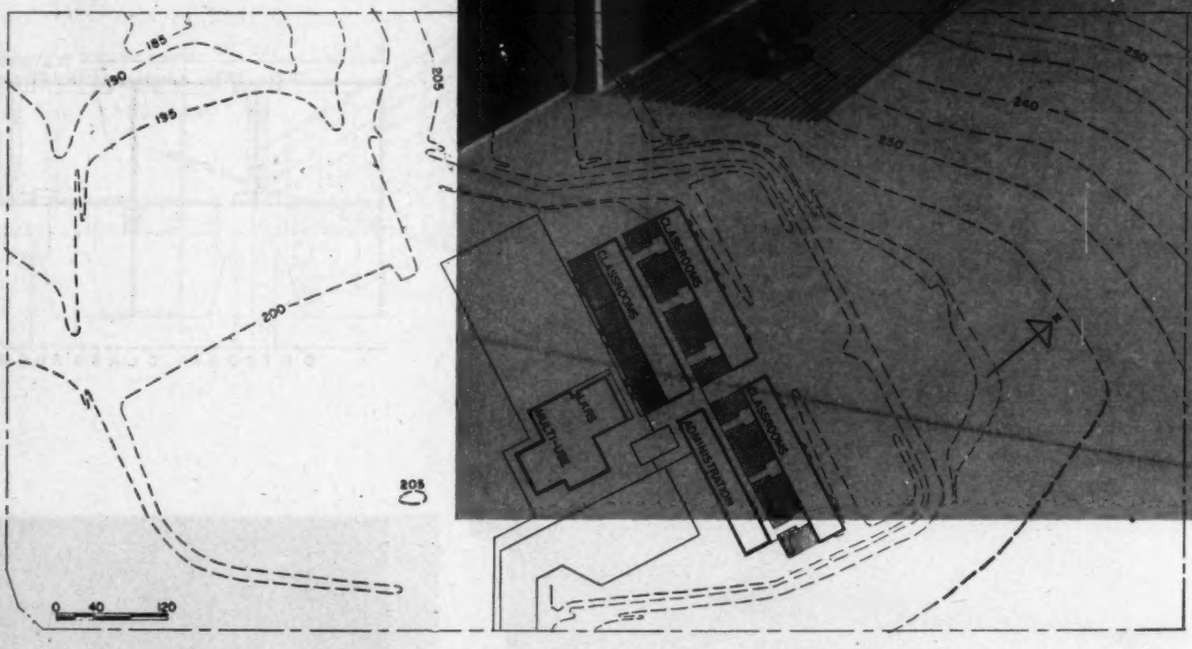
Perspective of the entrance façade with auditorium and future industrial arts structure shown at left

TIERRA LINDA SCHOOL
Belmont, Calif.

Architects:
John Lyon Reid & Partners

Engineers:
L. H. & B. L. Nishkian, Struct.
D. A. Coddington, Mech.
F. W. Schlapp, Elec.
Dariel Fitzroy, Acoustical

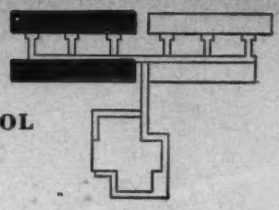




HOME ROOMS FOR SEVENTH AND EIGHTH GRADES

THIS SCHOOL for seventh and eighth grade pupils was first presented in ARCHITECTURAL RECORD in November 1952, as one of the early developments of a new type of secondary school program. At that time, part of it was under construction; it has since been more than doubled, and it can be further expanded to an ultimate 30 classrooms for which the initial scheme made provision.

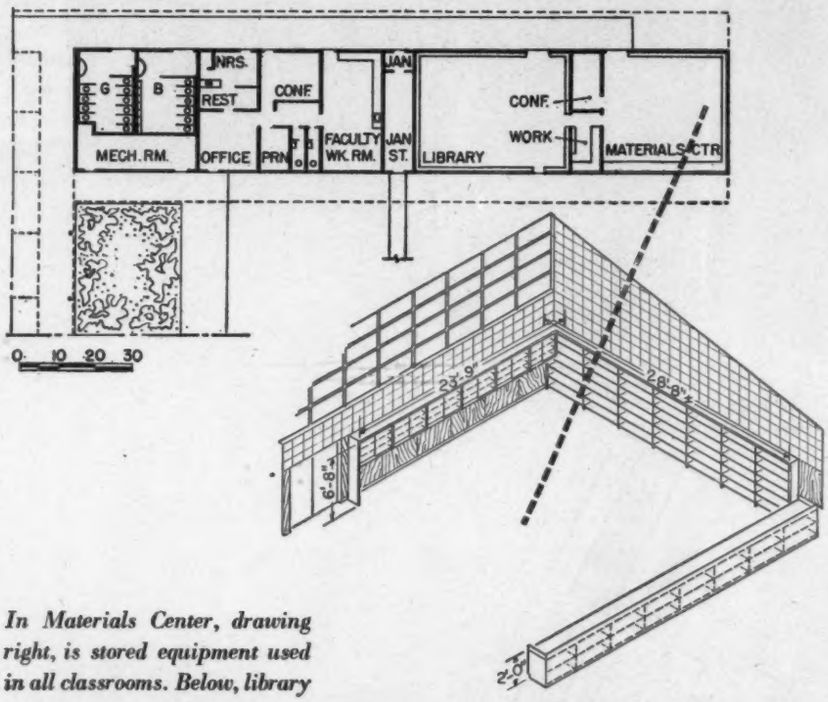
The unusual age grouping, the unique teaching methods — at the time these were considered revolutionary — and

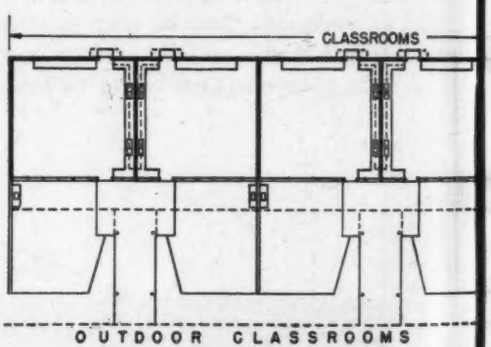


7TH AND 8TH GRADE SCHOOL

the very different building design were truly the result of community-educator-architect cooperation. Literally months of discussions and defining of requirements, with laymen, board members, administrative staff, faculty and the architects all participating, preceded design. While what has resulted has the outward appearance of a typical California finger-planned plant, in dimensions, equipment, purposes and actual use Tierra Linda is a distinct departure, much closer to the "little school" concept than to the traditional platoon-system junior high school. Its organization might be compared to the home-room type familiar in elementary schools, in that all subjects except music and physical education are taught in each classroom; each class tackles academic subjects, home making, science, light shop work, arts and crafts within its

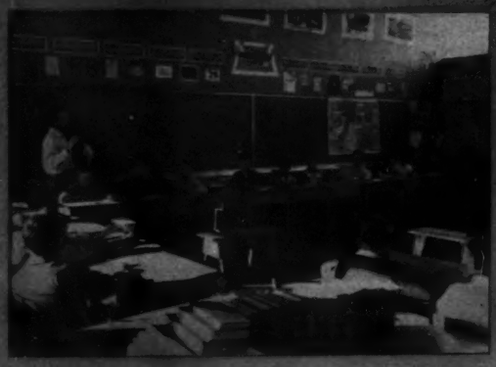
Top row: students requisition equipment in Materials Center; range and kiln in use in classroom; lower row, classroom planning session precedes carpentry exercises in outdoor classroom



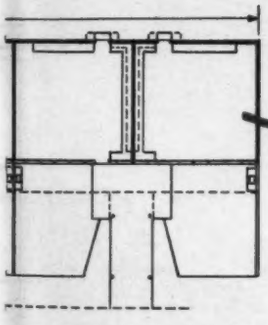


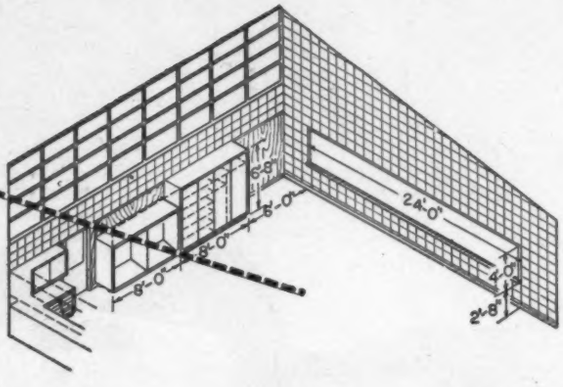
In Materials Center, drawing right, is stored equipment used in all classrooms. Below, library

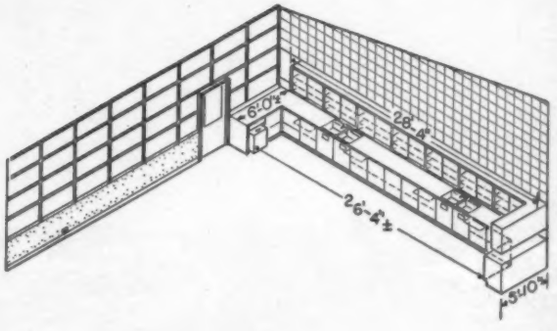
Building photos, Roger Sturtevant

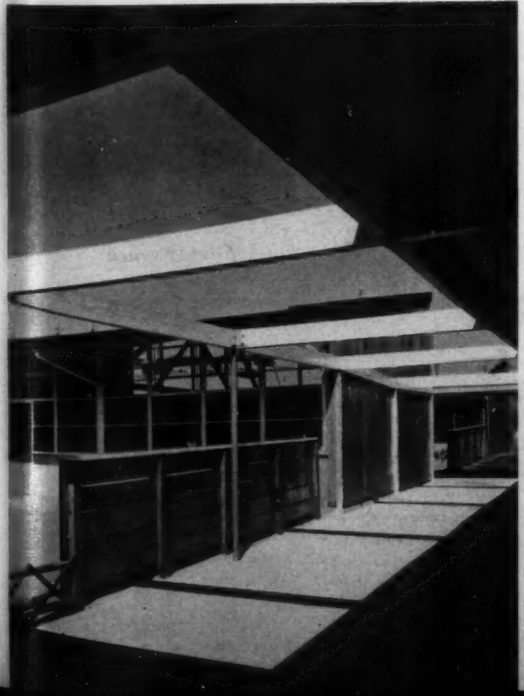


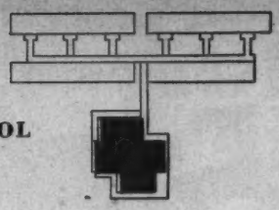
Activity photos, John Lyon Reid









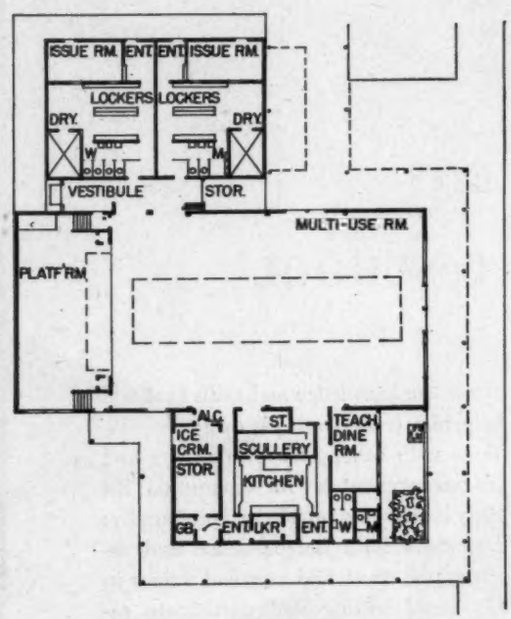


home-room environment. All kinds of class projects are proposed, discussed, organized and carried through in the one area. Some of these necessitate special connections to utilities, multiple sinks, extensive counter space; there must be room for work and discussion groups; unusually ample display space is required. Each classroom has its adjacent paved outdoor classroom, partially under the wide roof's eaves, surrounded by planting spaces which are both teaching tools and decoration and separated from its neighbors by simple redwood fences. The outdoor rooms are actively used for subjects which might be too noisy or space-consuming for the indoor classrooms, ample though these are, and they provide an outlet for characteristic physical energy. Equipment ordinarily found in shops and laboratories — kilns, ranges, tools, etc. — is stored in a materials center, requisitioned as needed and transported on dollies to the home room by the pupils. The library, adjoining the materials center, is used as a research center. The program and its plant make unusual demands on the teaching staff; the challenge has been enthusiastically accepted and the school is reported to be operating more successfully than its pioneering protagonists dared to hope.

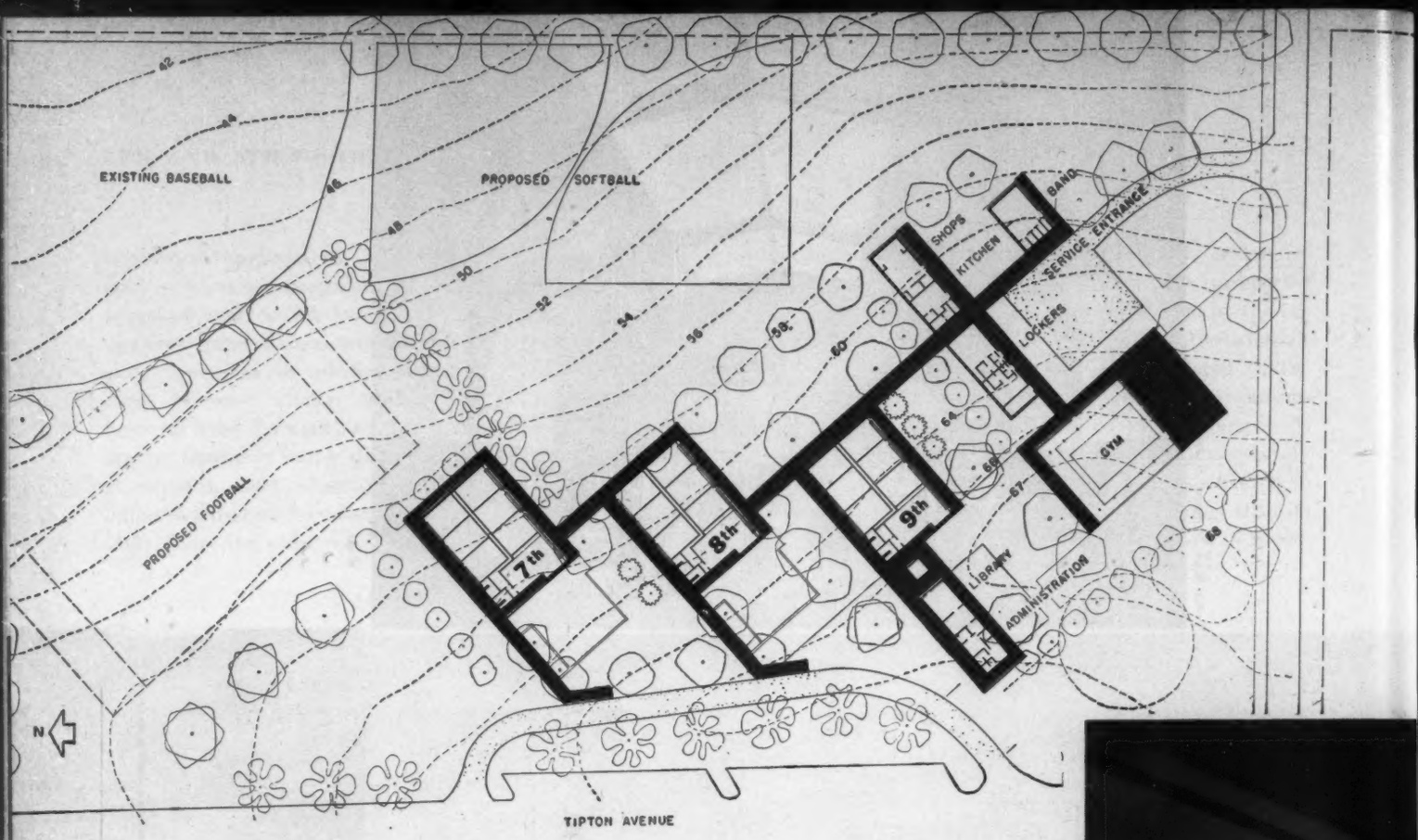
Above, multipurpose building; Below, left, corridor to classrooms; right, to multipurpose building and dining terrace

Photos: Roger Sturtevant except as noted

John Lyon Reid



Top of page, multipurpose room (see plan at left) houses a student dance; immediately above, same room during a concert

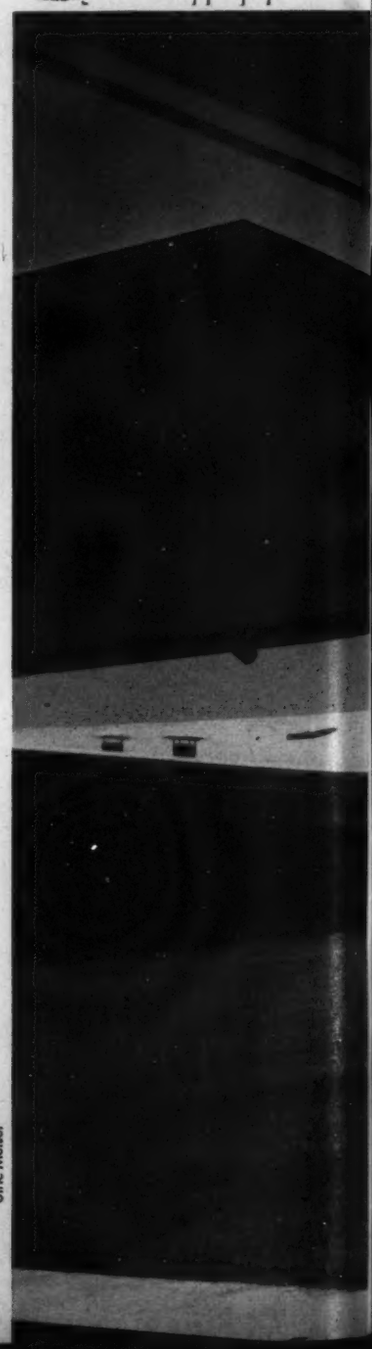


DEFINING TEEN-AGE NEEDS PRODUCES A DIFFERENT SCHOOL

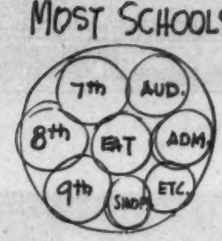
This term, junior high pupils in Tyler, Texas, attended for the first time a school designed particularly for them. Its program is based on the needs of children 13 to 15 years old — it is neither a downward penetration of the high school nor just a projection of the elementary.

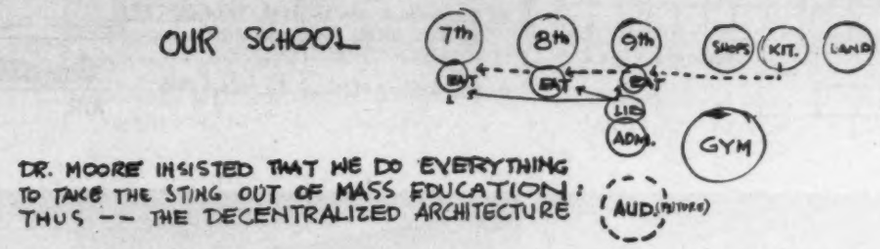
The teen-aged child desires and needs the knowledge and skills that will help him proceed on his own; his relations with others, his own nature and his environment cry for exploration; his body is changing rapidly and profoundly; he wants both independence and security; he must find personal values in his social setting and participate responsibly in larger groups.

Jay Otted & Assoc.

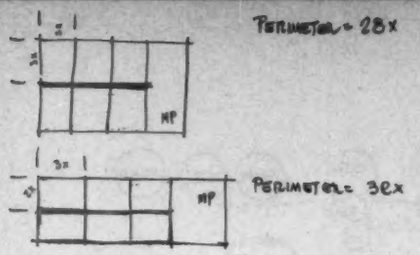


Ulric Meisel

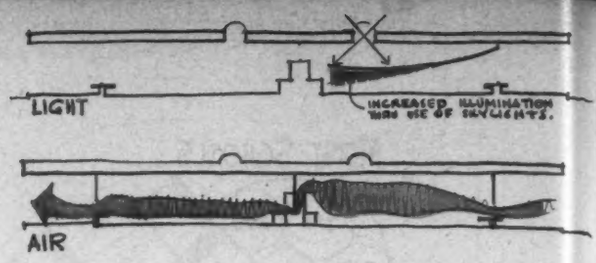




The advanced educational program for the new J. R. Moore Junior High School in Tyler, Texas, was developed by the community's school administrators and classroom teachers, headed by Hollis A. Moore, Superintendent. It was translated into architecture by Caudill-Rowlett-Scott, Bruce & Russell, Associated Architects & Engineers; Robert F. White was the Landscape Architect

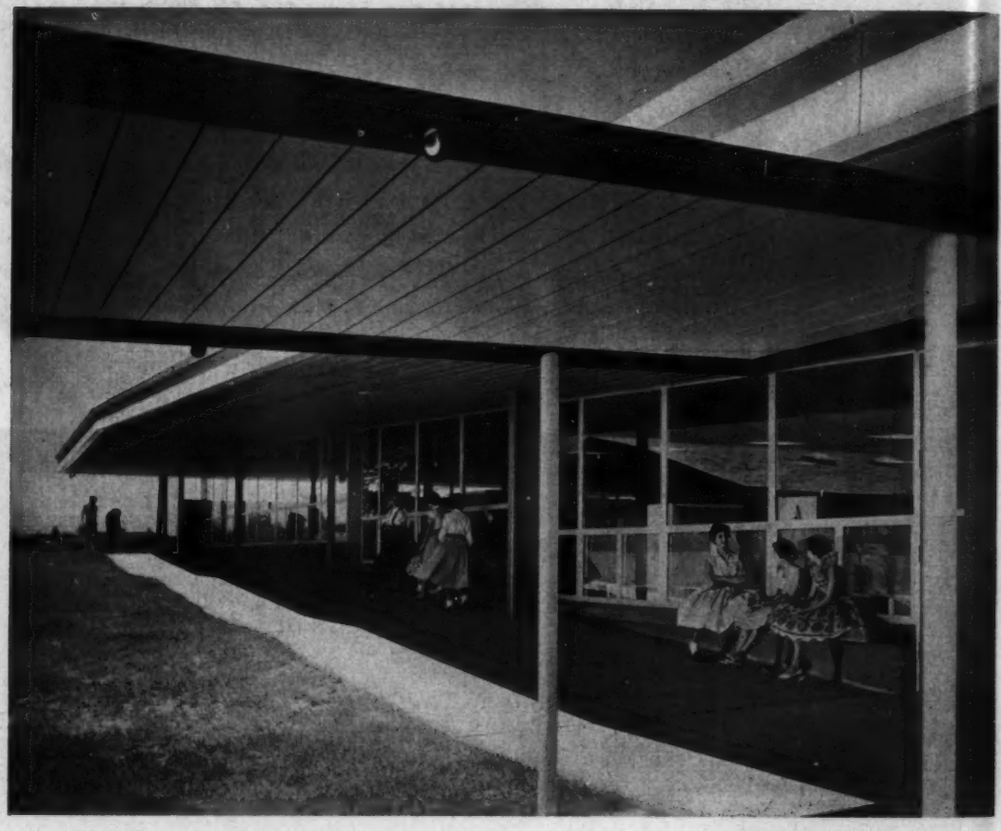


- walls to exterior are most expensive - must be minimum.
- classrooms placed back-to-back or core with long side of classroom on interior wall.
- good lighting obtained by skylights.

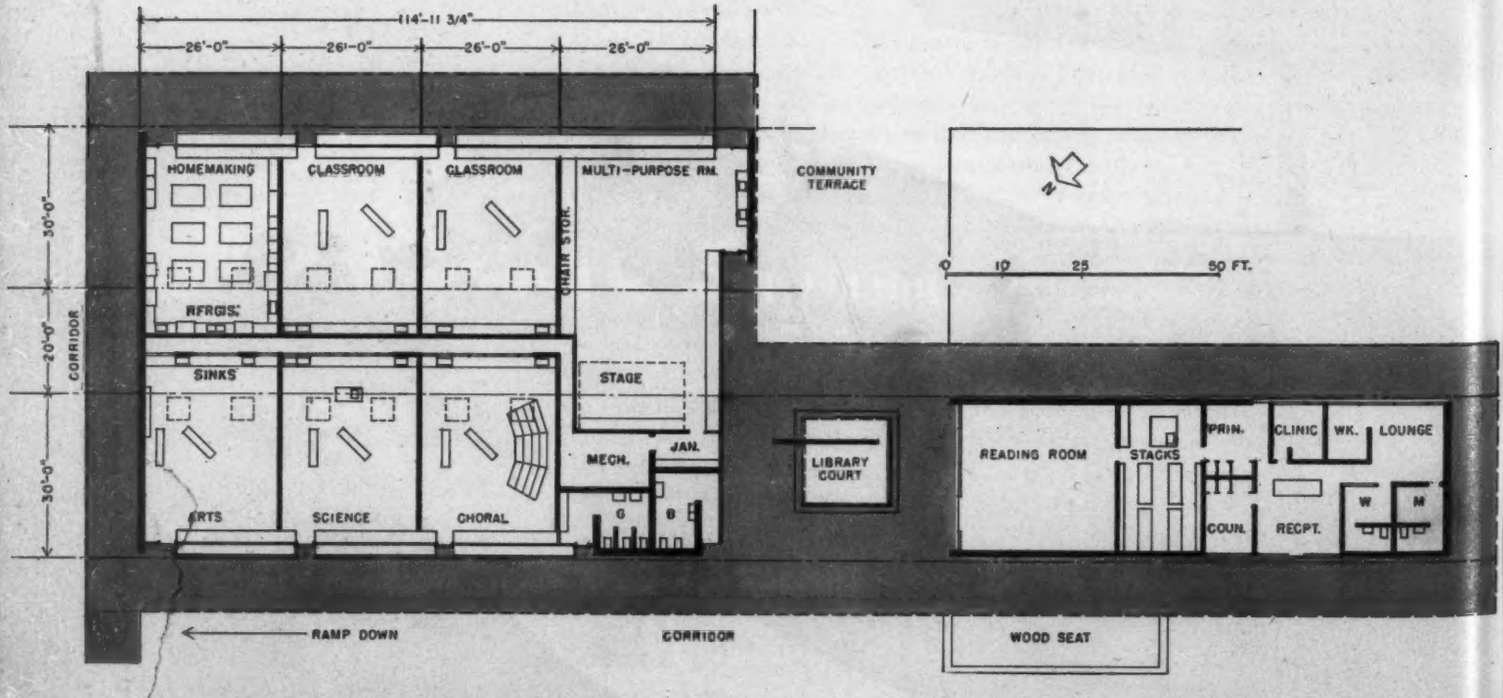


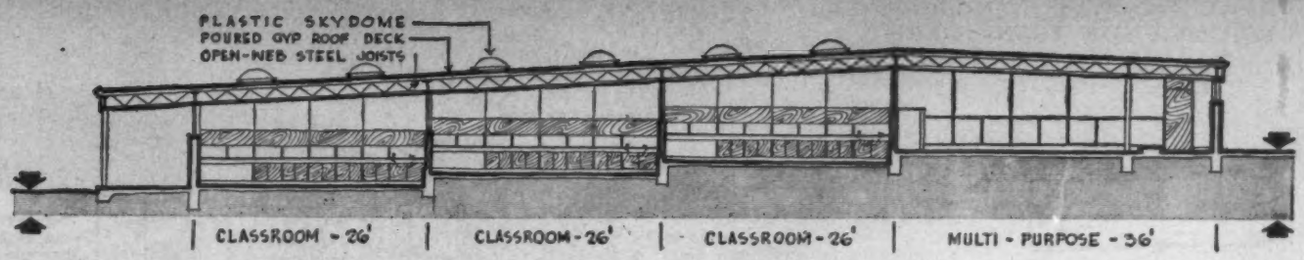
DESIGNED FOR TEEN-AGERS

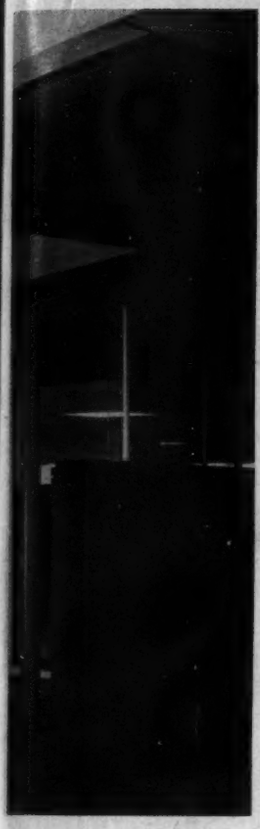
Ulric Meisel



Strategically placed baffle walls and attached seats help define each grade's outdoor neighborhood. In grade units, upper walls between classrooms are glazed to increase visual unity, reinforcing the educational aims



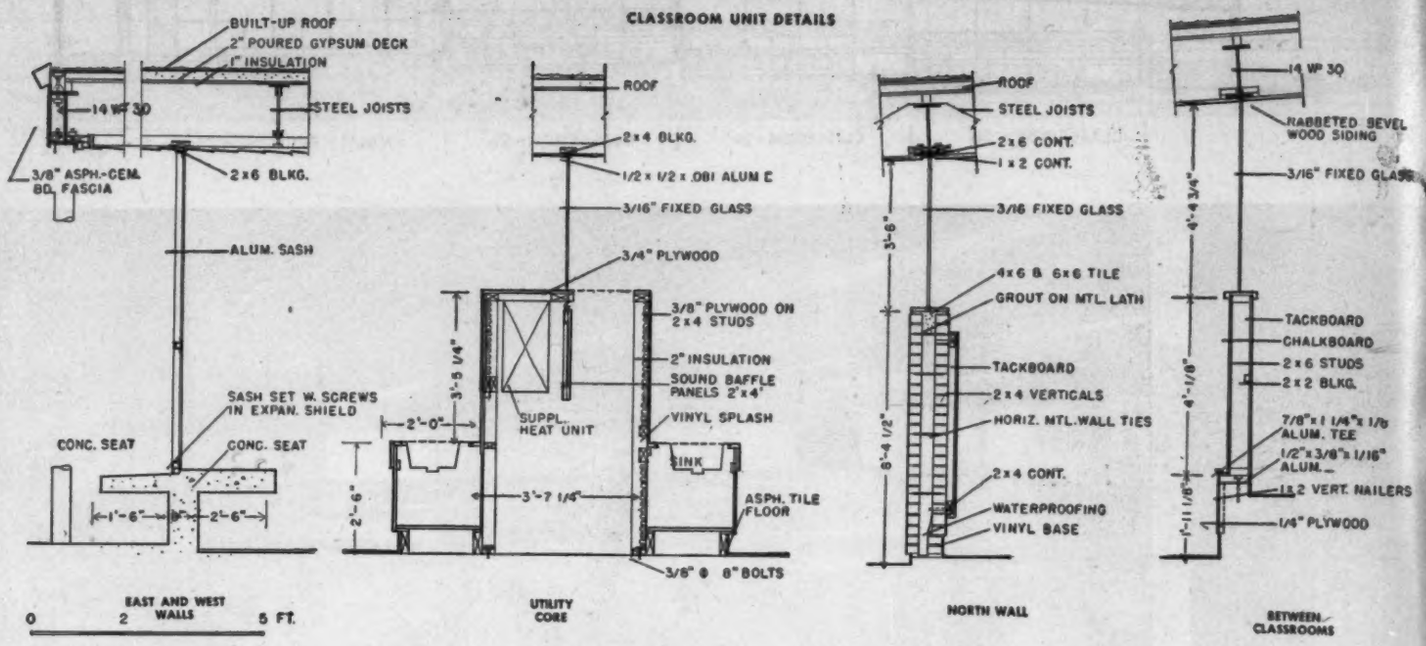




With the junior high school thus conceived as an interim step in the educational ladder, the next decision was to face mass education, to resolve the conflict between sheer numbers of pupils and their need at this age for individual instruction. The only visible answer was subdivision of the large group, which was seen to have the further advantage of providing in a number of sub-groups opportunities for fitting the educational program even more exactly to pupils' requirements, year by year. This led to an organization by grades rather than a complete junior high school per subgroup. Further research produced the concept of each grade level functioning as a unit, with children of like age and similar aptitudes carrying on many joint activities. This is precisely counter to the departmentalization characteristic of most senior high schools, and to the demands of more specialized education. Here, it was felt, first consideration should be given mastery of the skills and tools of learning and the pupil should be given a broad perspective of such organized areas of learning as science and vocations, rather than intensive study or training.

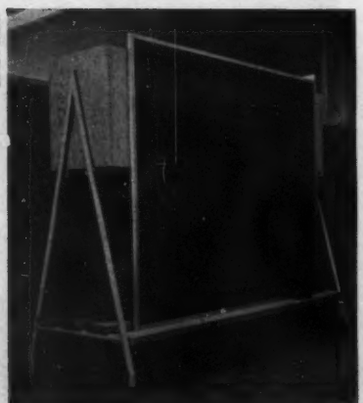
Such, then, were requirements: a school for a large number of pupils to be subdivided into a succession of teenagers' neighborhoods, on a 21-acre site; the climate was difficult; money, as always, had to be conserved. The architectural program — a series of six-classroom units each focussed on a student center to serve many functions, all served by a group of facilities which demanded separate buildings — evolved naturally.

Equipment varies from room to room within each grade unit. Rooms are deep, skylighted



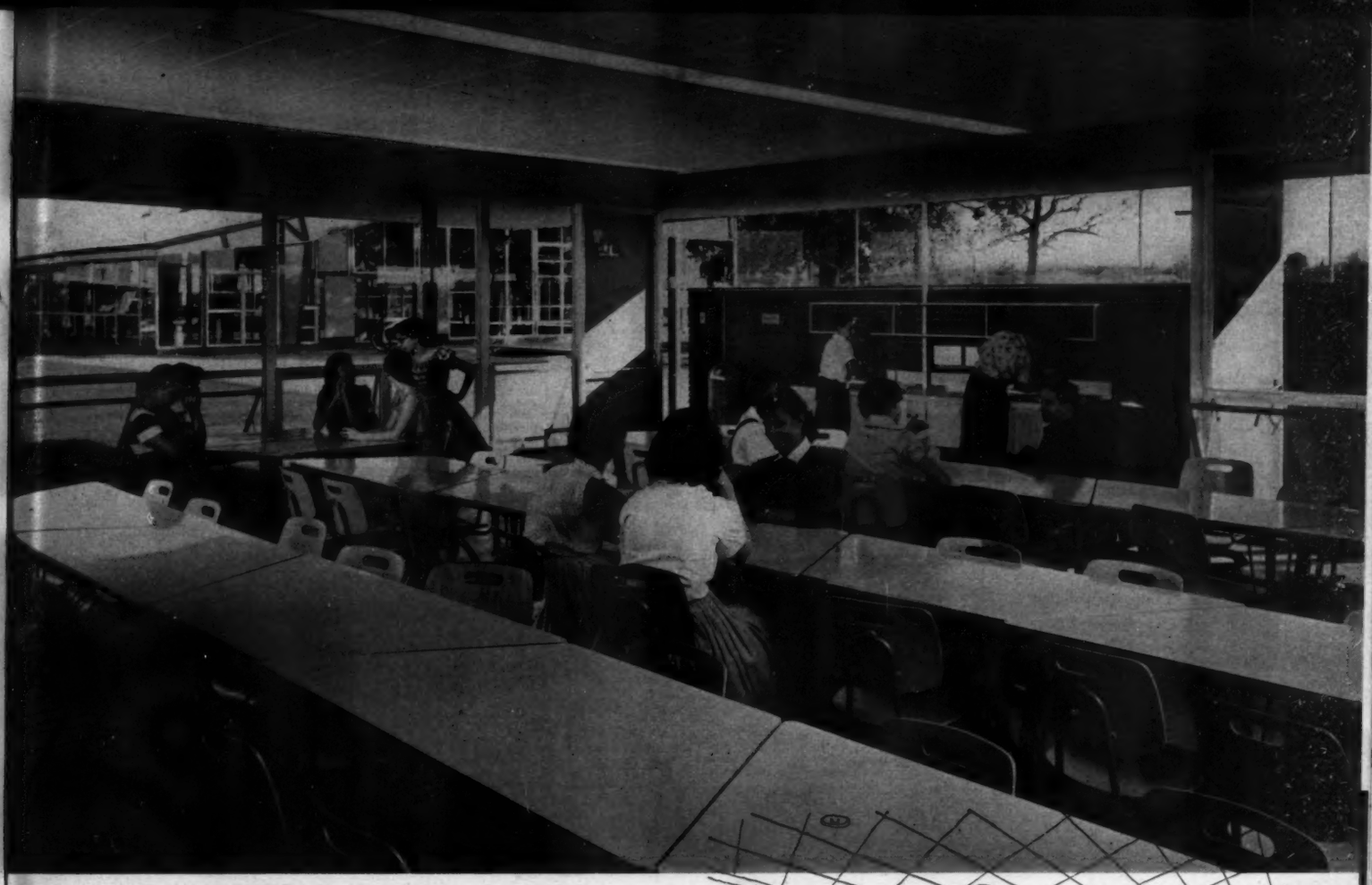
Below, two more of the room arrangements within a typical grade unit at the new Tyler, Texas, junior high school. Above, non-load-bearing walls are independent of framing

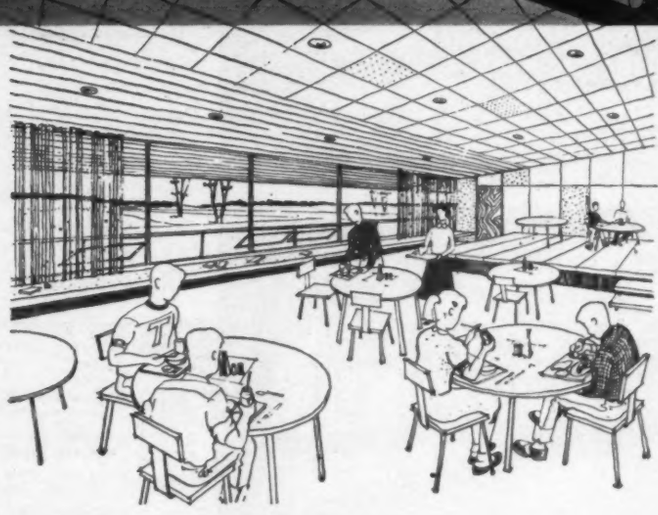
Ulric Meisel



Portable storage, clothing and chalkboard units were designed and detailed by the architects, provided by the contractor

The Tyler junior high school takes seriously its role as a *transitional* school unit. For seventh graders it has a series of completely self-contained classrooms, following the elementary school formula. A partly self-contained classroom concept serves eighth graders; and a departmentalized set-up, like the senior high school's, is provided for ninth grade pupils. However, regardless of what direction the teaching program for teenagers takes, this school plant will be able to accommodate it because its layout is decentralized. It will permit



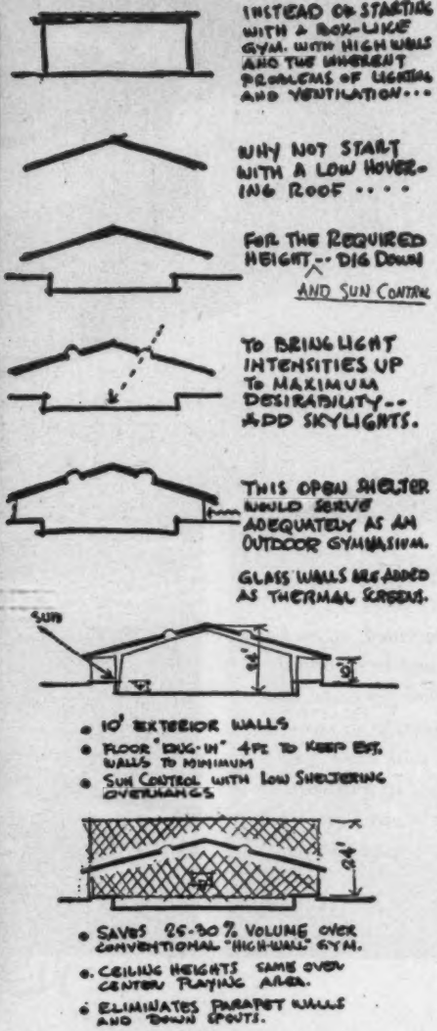


The multi-function room or student center contained in each grade unit appears above. The trapezoidal tables may be arranged as shown for eating or grouped differently for other purposes, as indicated in the preliminary design sketch at right. It was considered imperative that pupils in each unit eat with their own small group; mass eating was believed to be as bad as mass education, perhaps worse. Food is prepared in a central kitchen (see next page) and brought to individual student centers by carts

economical, efficient expansion, although the hope is that enrollment will not exceed 750 pupils.

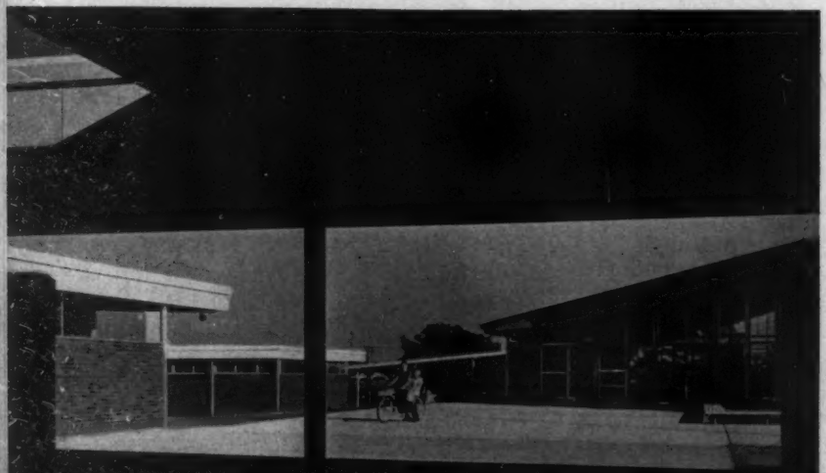
Each of the three student centers is roughly equivalent in size to two classrooms. Each opens into an informal terrace, with built-in, sheltered seats where children may discuss everyday problems in informal groups. The centers themselves will serve as unit assembly rooms (provision is made for a separate future auditorium), as dining rooms, as places for group performances, for class activities requiring tables, for visual aids, conferences, parent meetings, student parties, faculty meetings, demonstrations, display of trophies and the like, as well as for study and reading. They are intended to be the pupils' living rooms, their homes at school, places where they can gather in the mornings before the first bell rings.

The classrooms in each unit step down, following the natural grades, each about 1½ ft below the next. Because the upper portion of each wall between classrooms is glass, a teacher standing in the student center will be able to see entirely through the building, and the continuity of the roof — which, too, follows the slope — helps to increase the sense of unity, of being part of a homogeneous group, which was one of the cardinal principles stated in the educational program. Technically the classrooms should be more than satisfactory; they were tested in model form at the Texas Engineering Experiment Station to make sure there would be more than the required minimum 25 footcandles of light at desk level, and ample natural cross-ventilation.


INSTEAD OF STARTING WITH A BOX-LIKE GYM. WITH HIGH WALLS AND THE INHERENT PROBLEMS OF LIGHTING AND VENTILATION...
WHY NOT START WITH A LOW HOVERING ROOF....
FOR THE REQUIRED HEIGHT -- DIG DOWN
AND SUN CONTROL
TO BRING LIGHT INTENSITIES UP TO MAXIMUM DESIRABILITY -- ADD SKYLIGHTS.
THIS OPEN SHELTER WOULD SERVE ADEQUATELY AS AN OUTDOOR GYMNASIUM.
GLASS WALLS ARE ADDED AS THERMAL SCREENS.
SUN
• 10' EXTERIOR WALLS
• FLOOR "DUG-IN" 4FT TO KEEP EXT. WALLS TO MINIMUM
• SUN CONTROL WITH LOW SHELTERING OVERHANGS
• SAVES 25-30% VOLUME OVER CONVENTIONAL "HIGH-WALL" GYM.
• CEILING HEIGHTS SAME OVER CENTER PLAYING AREA.
• ELIMINATES PARAPET WALLS AND DOWN SPOUTS.

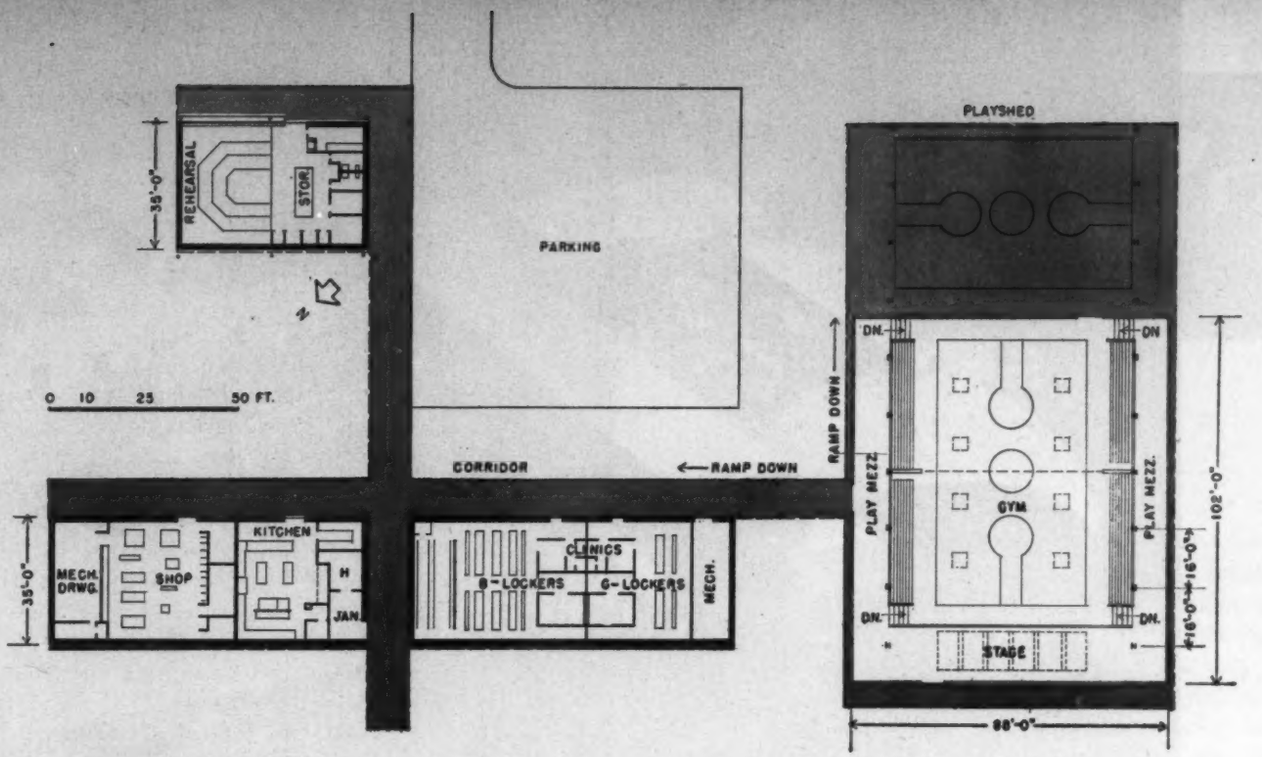
Of the special buildings at Tyler's new junior high, design of the gymnasium is perhaps the most exciting though all have their excellences. The thinking which accompanied development of this super-playshed, partially enclosed by glass walls and partially open, is graphically shown in the accompanying sketches. Locker rooms were put in another building, combined with the kitchen, so one mechanical ventilation plant could take care of odors from both. Other deciding factors were the realization that, since many games can be played best outdoors, the more a gym could be like the outdoors, the better; natural ventilation should be through low openings; massive masonry was too expensive; the activity area should be completely shaded.

Construction costs were surprisingly low. The general contract was $452,949; mechanical, $79,184; electrical, $45,159; kitchen equipment, $7,720 — total $585,012. Figuring heated areas (44,580 sq ft) at unity and covered areas (14,163 sq ft) at ½, the cost per sq ft was $9.95. The general contract included terraces, walks and drives not figured in the above areas. This is attributed to the logical, simple construction and to such factors as the use of bold yet pleasing color rather than monumental materials; and these are also the elements which make the school a very human structure.



Ulric Meise

Photos, this page, top to bottom: band room (in separate building); playshed and gymnasium with band and shop buildings in distance; gymnasium exterior and interior, gym from library court. Facing page; gym from 9th-grade student center


PLAYSHED
REHEARSAL
STOR
35'-0"
PARKING
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CORRIDOR
RAMP DOWN
RAMP DOWN
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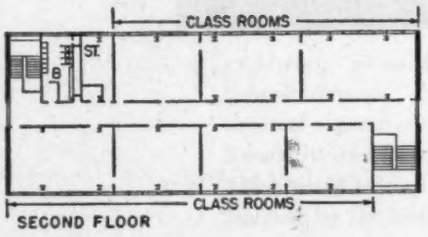
PLAY MEZZ.
PLAY MEZZ.
GYM
STAGE
102'-0"
16'-0"
16'-0"
88'-0"
35'-0"
MECH. DRWG.
SHOP
KITCHEN
H
JAN.
CLINICS
B-LOCKERS
G-LOCKERS
MECH.

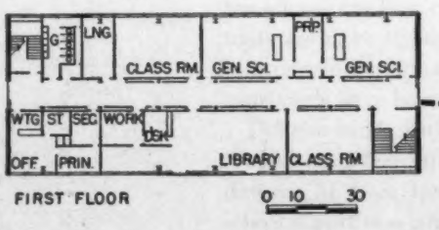
FLEXIBLY DESIGNED FOR ULTIMATE DEVELOPMENT

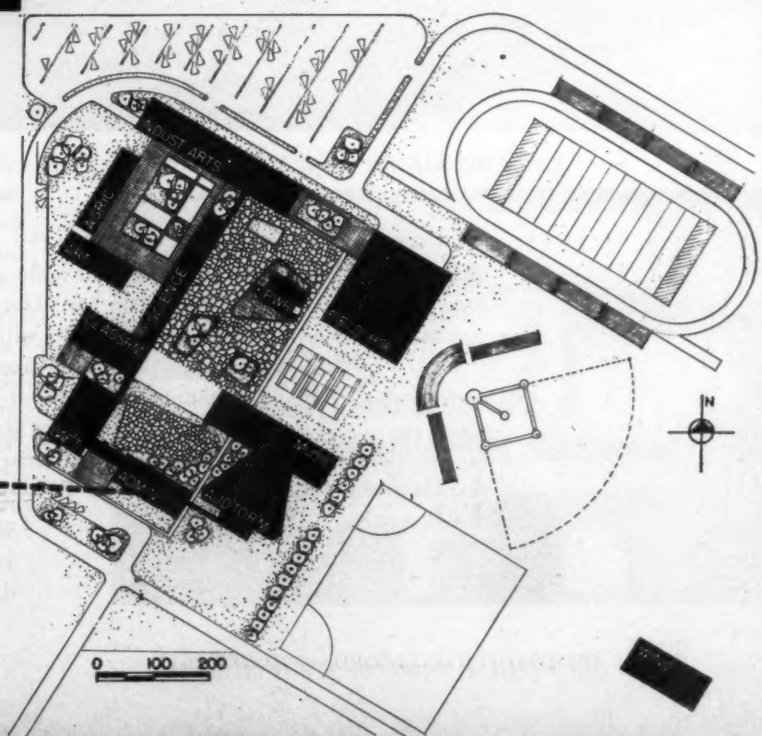
JUNIOR HIGH SCHOOL, FARMINGTON, N. MEX.

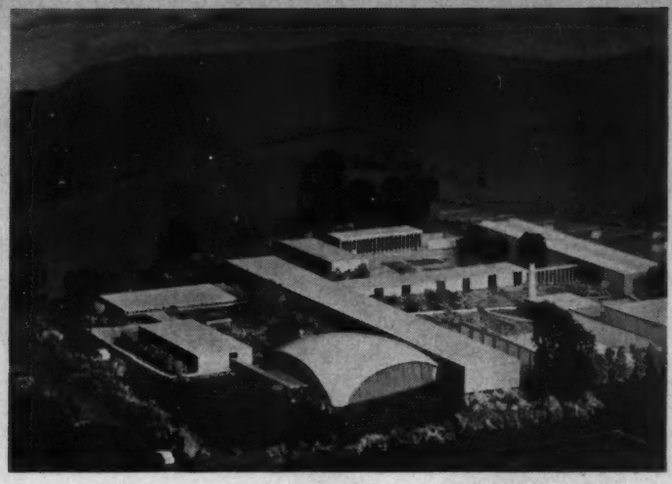
Flatow & Moore,
Bryan & Fairburn,
Architects

CAMPUS PLANS for secondary schools, only yesterday a novelty, are now being executed in many localities. On the limited level area of this New Mexico site is being erected, unit by unit, one of the most highly developed of the departmentalized junior high school campuses we have seen. The plant has been designed for an eventual full complement of buildings for an enrollment of less than 1000 pupils, although only one segment, a portion of the two-story classroom wing, is open and occupied this season. All partitions between classrooms are movable; which means that should the educational program, nature of rooms or size of classes change, building interiors can be rearranged without disturbing the structure or the shell; and that offices now in the completed unit can be replaced by more classrooms when the administrative wing is built.







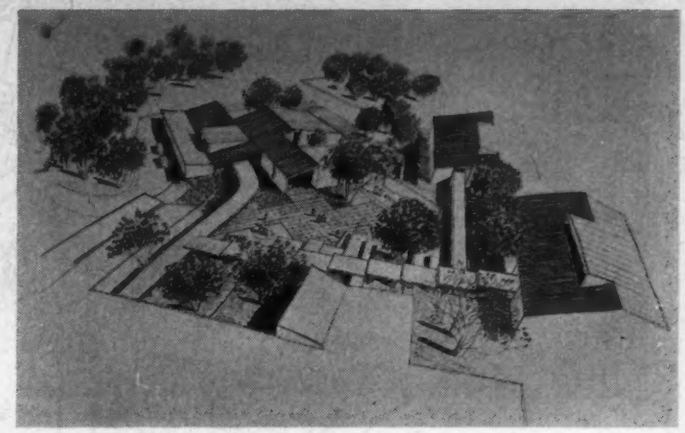


NEW MEXICO JUNIOR HIGH SCHOOL

Like the completed unit, all classroom buildings are to have a steel frame, concrete slab decks on bar joists, insulated steel and asbestos board "sandwich" side walls with large expanses of heat-absorbing plate glass. All glass is fixed; there are no movable sash; there are complete mechanical ventilation and steam heating — a combination designed for economical operation in this climate of extreme temperatures. Movable partitions between classrooms are 3-in. solid T & G west coast cedar in 4-ft panels.

Vincent G. Kling, Architect **Engelhardt, Engelhardt & Leggett, Educational Consultants**

OF THESE THREE SECONDARY school campuses, the Muhlenberg, Pa. plant is under construction; the other two are in the working drawing phase as this is written. A desire to provide something better than what the architect calls "an industrial character," which large plants of this kind so often have, was the architectural starting point in all three cases. In this, his efforts follow the trend toward more human scale and proportion; and he has further developed the campus plan, giving it unity and order as well as humanity, by introducing a large central space to serve as a stage for much of each school's social activity.

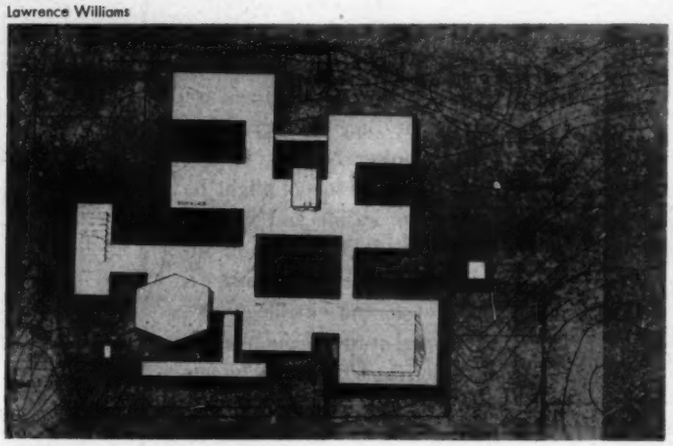


JUNIOR HIGH, MUHLENBERG TWP., PA.

SIMILAR EDUCATIONAL AND ARCHITECTURAL

Such an activity center, like all worthwhile architectural entities, has more than a merely architectural purpose. It is also part of the educational program, an extremely important expression of the educator's realization, paralleling if not motivating the architect's awareness of pupils as human beings as well as subjects for improvement. As to program, the Glen Head school started out perhaps somewhat in advance of the other two. Midway in design the first Glen Head scheme was, to quote the

Lawrence Williams



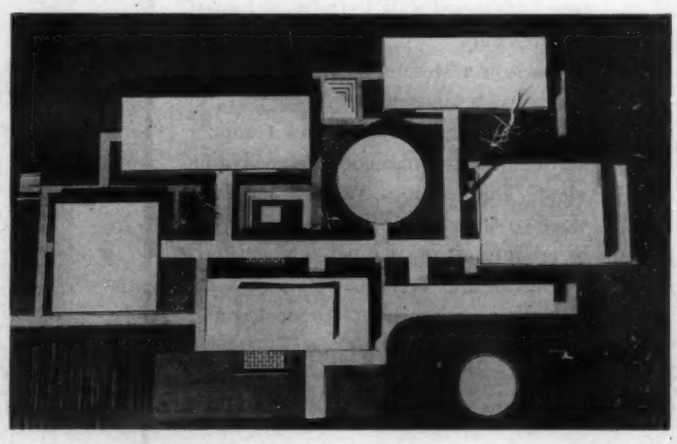
JUNIOR-SENIOR HIGH, GLEN HEAD, N. Y.

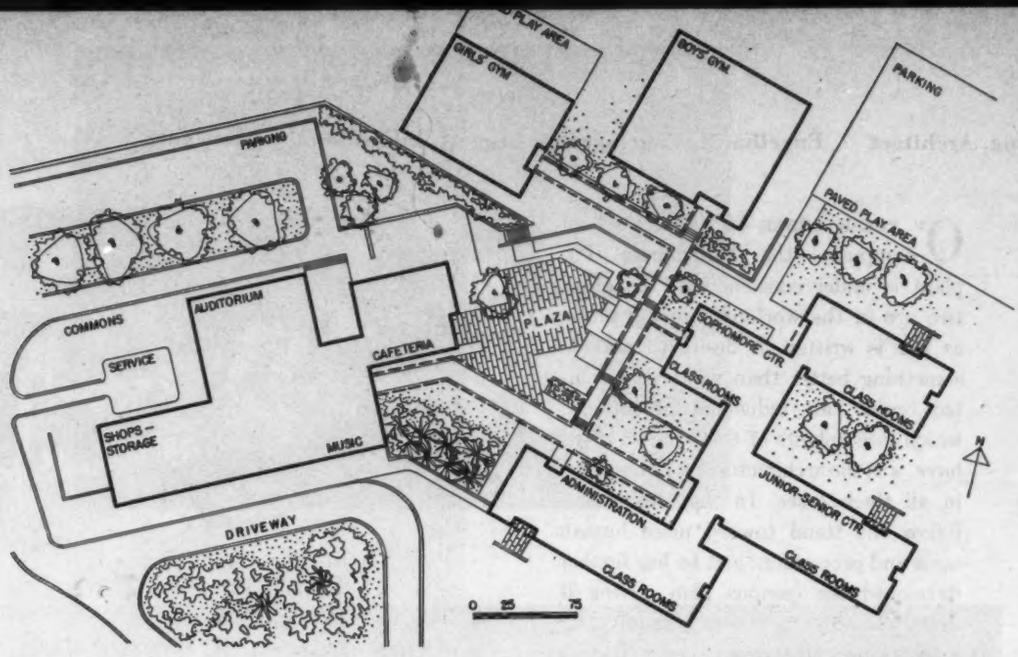
APPROACHES PRODUCE THREE DIFFERING RESULTS

architects, "given the axe by a drastic program change." Initially it had consisted of a group of units each organized around its own interior court, a concept which could easily have developed into facilities for the kind of subdivided high school described in preceding pages. Now the scheme has been revised, the various units are more tightly organized, there is a principal court and the subsidiary courtyards have become less important.

Differences in site conditions and allowable costs bore strongly on the three designs. At Glen Head, the secondary school is part of a larger program which

SENIOR HIGH, LOWER MERION, PA.





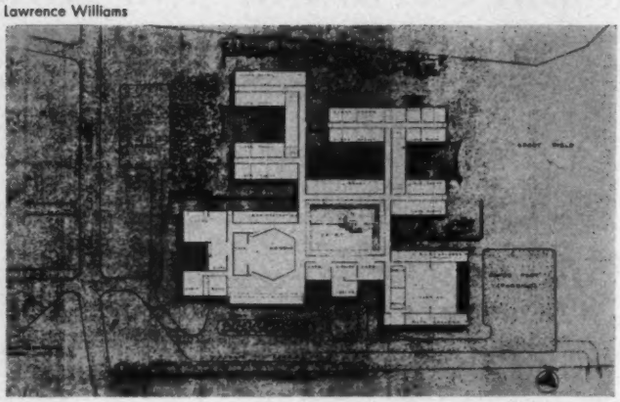
Lower Merion Senior High School

THREE DIFFERENT SCHOOLS

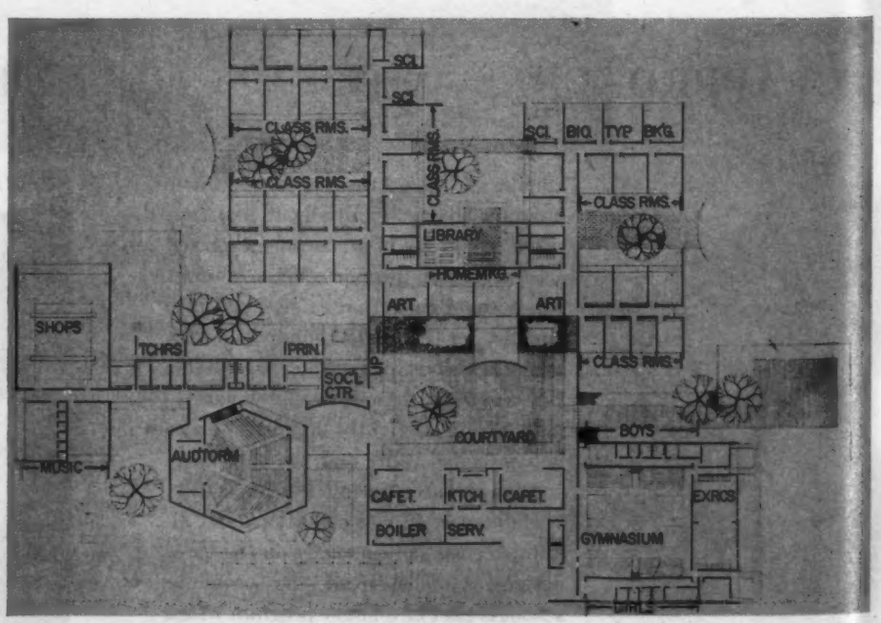
includes an elementary plant on an adjacent plot, and the surroundings are less inviting than they are at either Muhlenberg or Lower Merion. Consequently the Glen Head school might be called introversive; its life and vitality are focussed within. At one point, indeed, it would have presented almost a solid blank wall to the outside world. However, a careful study of the plant in model form convinced the architects that there was danger that it would be quite inhuman in scale because of its excessive length and relatively low fascia. In the final scheme, corridors in the Junior and Senior units have been opened to allow vistas into the small courtyards, the library now opens into a quiet, intimate space, and an informal outside activity area has been added to the north of the gymnasium, connected by a wide paved walk to the more formal central court.

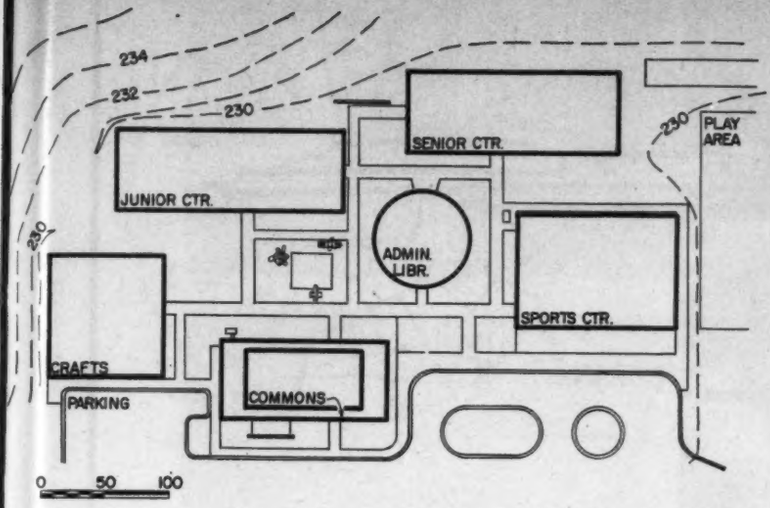
The Lower Merion school, on the other hand, has a rugged site (in contrast to Glen Head's relatively level campus) surrounded by pleasant Pennsylvania views. The buildings, stepped down the slope so that from below they build up in an interesting manner, are grouped around a comparable central court; some of them are closely interconnected and some separated; but all open out pleasantly; Lower Merion Senior High is outgiving, the reverse of Glen Head.

Lawrence Williams

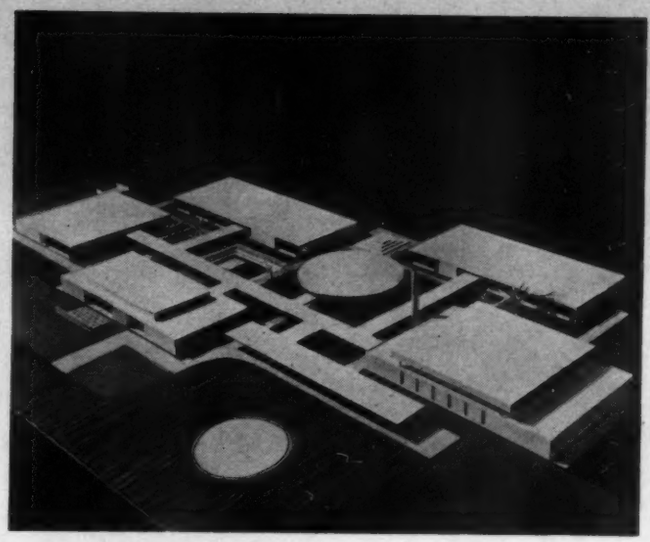


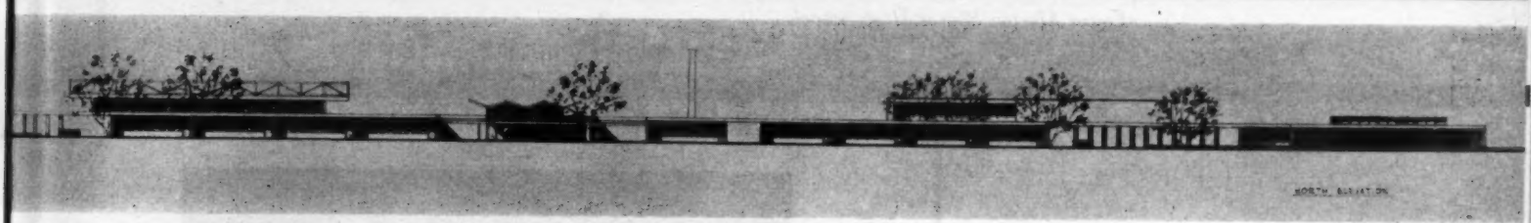
Glen Head High School; an intermediate step in planning above, new below



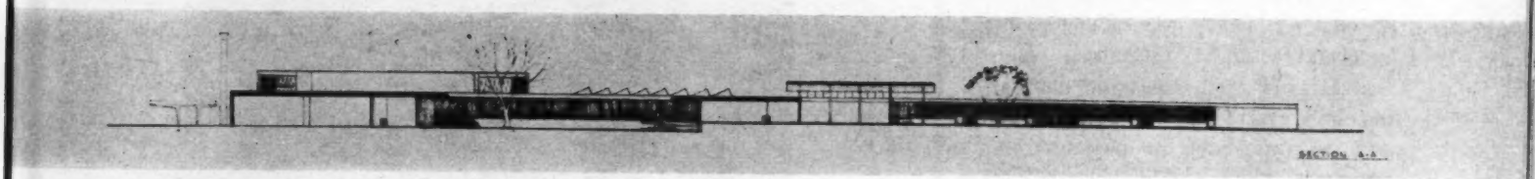


Muhlenberg Junior High School





North Elevation



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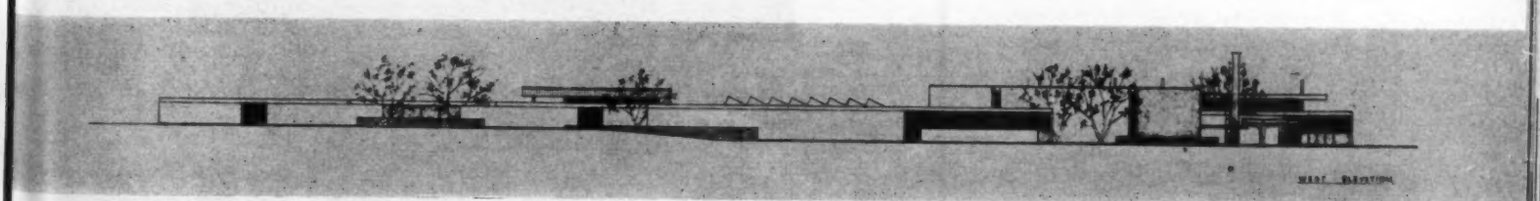
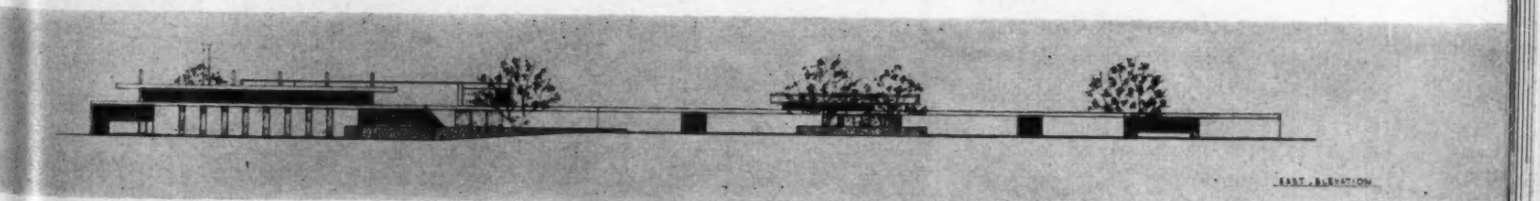
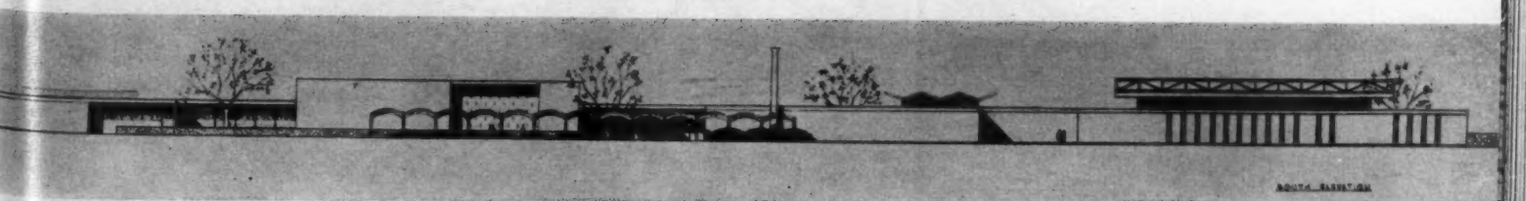


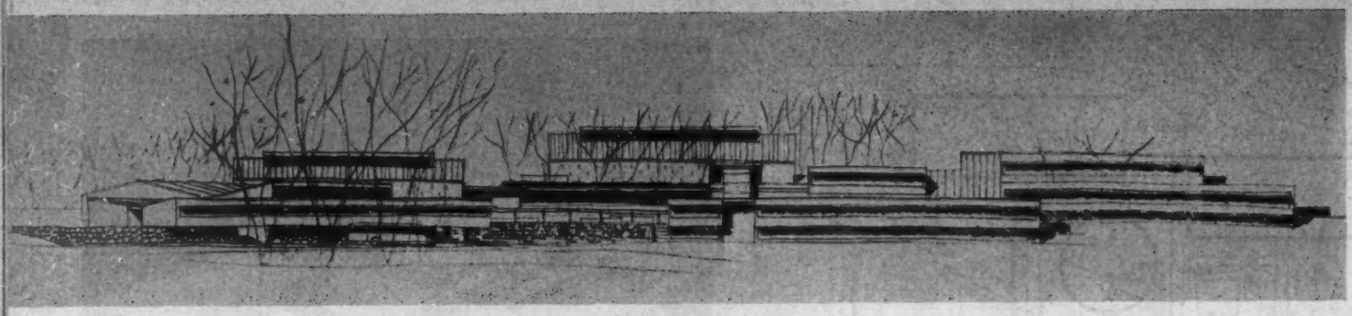
West Elevation

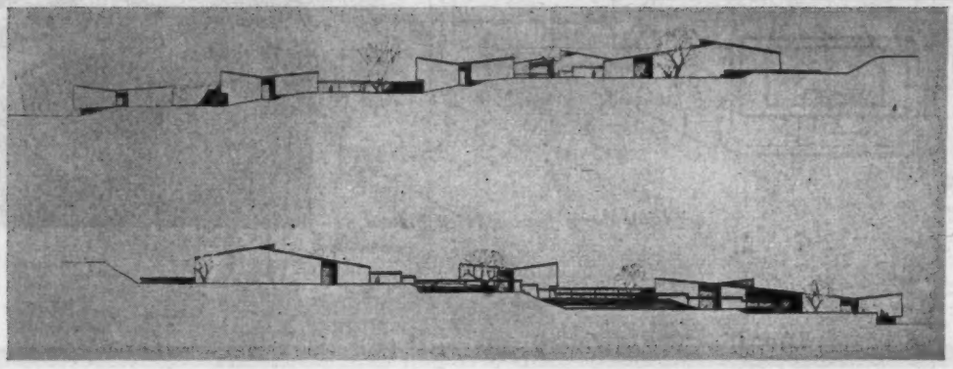


East Elevation



South Elevation





Lower Merion Senior High School

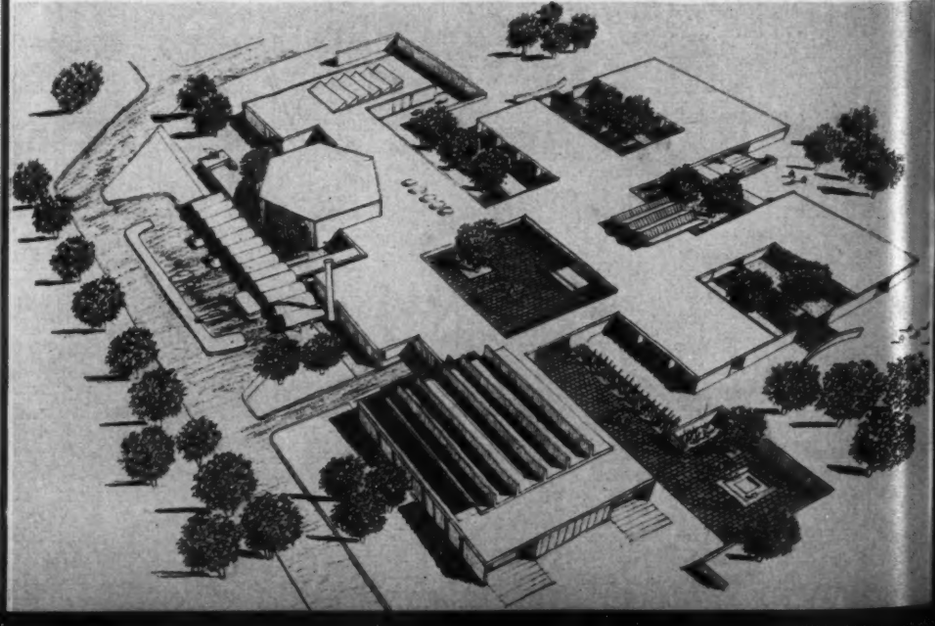
THREE DIFFERENT SCHOOLS

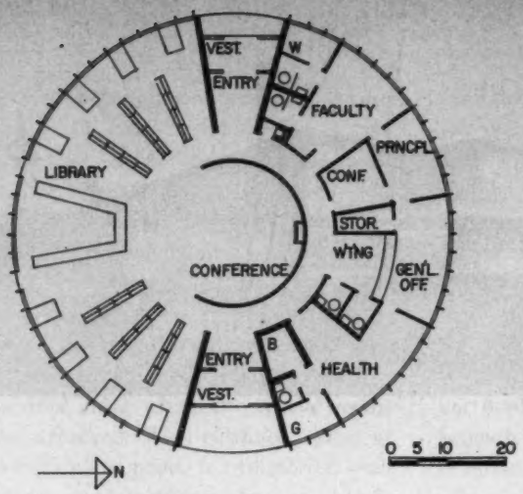
At both Glen Head and Lower Merion reasonable economy was of course an important factor. At Muhlenberg Junior High School it came close to dominating the entire concept. Muhlenberg's buildings are ultra-simple in mass and organization; there is a conscious paring down in the sum and in all details. Nevertheless, however compactly the individual buildings are organized, however economically short are the runs of corridors, the designers have found room for the familiar central plaza. It is sunken this time, offsetting the close proximity of the school's buildings, and mostly paved so its maintenance will not be much of a problem. To relieve what might have been a monotonous repetition of simple box shapes, the administration-library unit is circular, with glass walls from floor to roof.

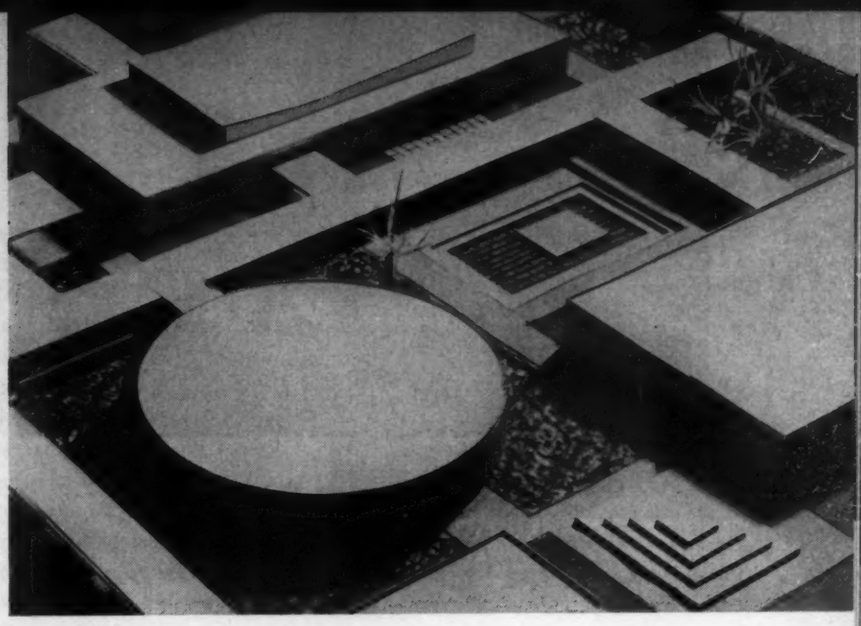
For all three schools the educational programs though not identical have many similarities; for all three the architectural point of departure was the same. The same educational consultants and architect developed all three. Local factors — site, community character and financial situation — lie behind their difference in design.

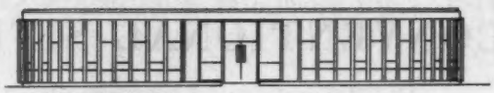
Glen Head High School; first scheme above, present design below; entrance on facing page

Lawrence Williams



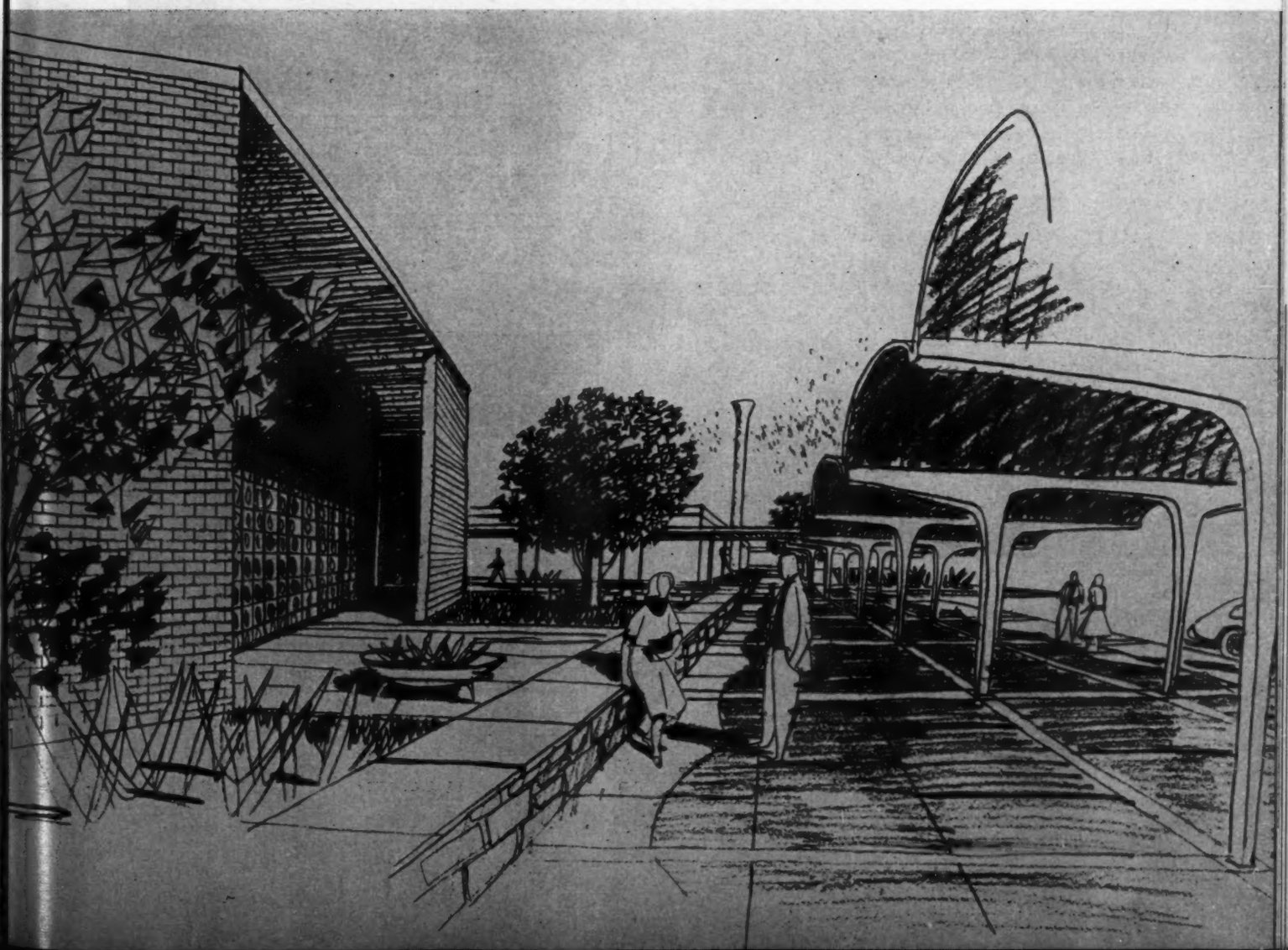






EAST ELEVATION

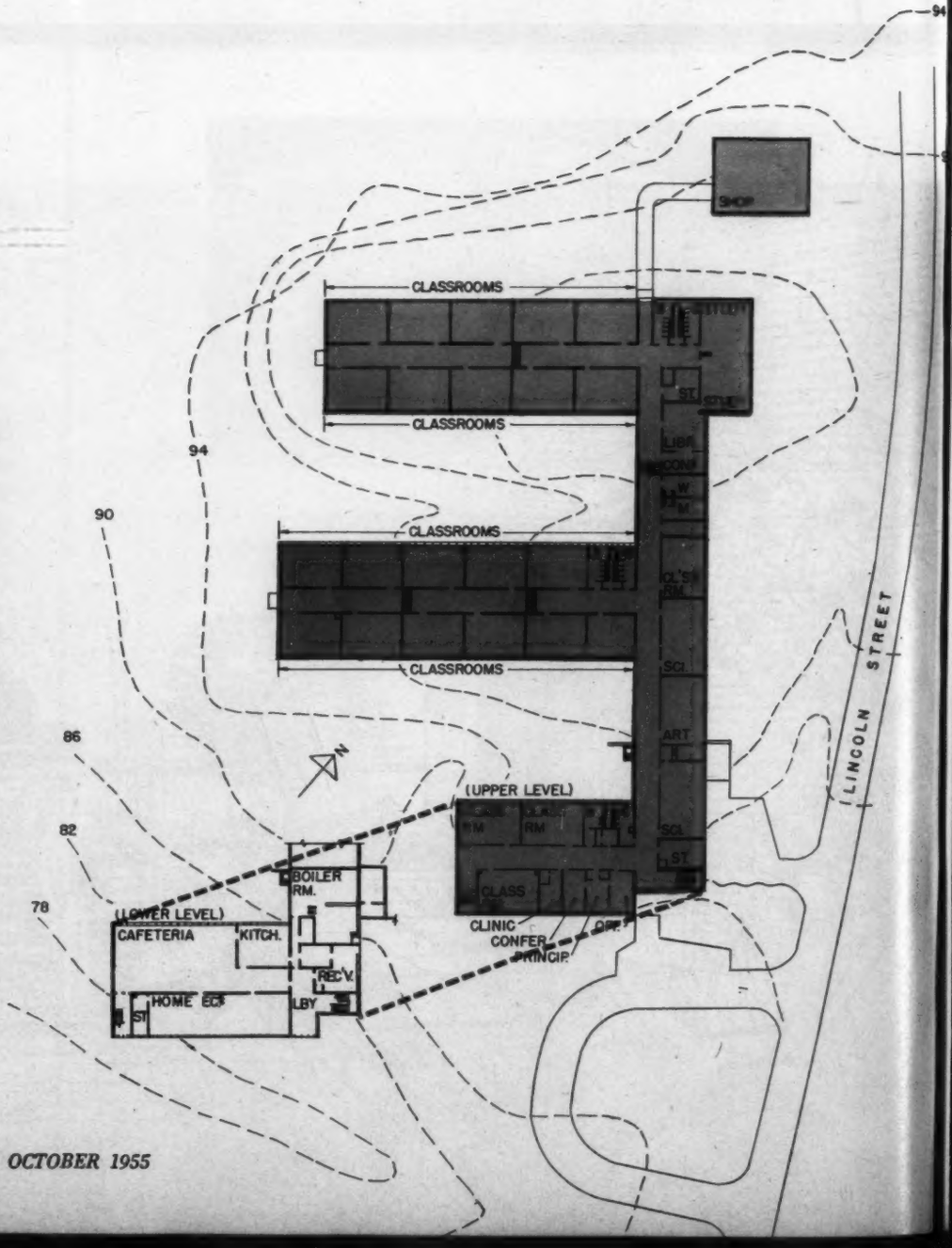
Muhlenberg Junior High School



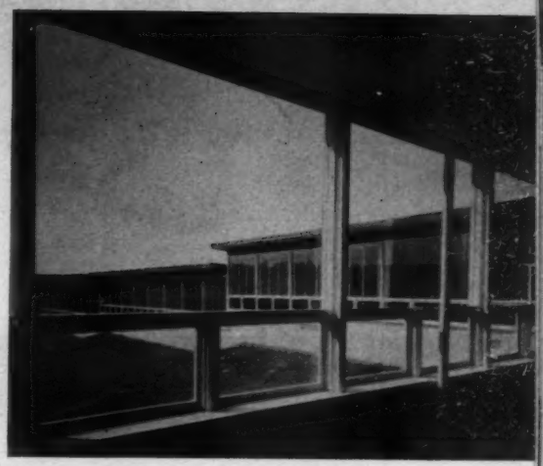
Joseph W. Molitor

CONVENTIONAL PROGRAM, UNCONVENTIONAL SITE

This may be the earliest example of a general contractor's job office and warehouse designed by an architect; it was built first, used during construction of the main building, now economically houses the school shop



WHILE the educational program for Bath Junior High School is conventional, the nature of the site — extensive acreage, sloping terrain and ledge rock close to the surface — and the desire to realize all the advantages of a one-story scheme, led to an unconventional modification of the finger plan. Two wings with double-loaded corridors step down the contours from a spinal corridor along which the special rooms are arranged. The entrance wing, at the site's low point, is two stories, with administrative offices above, cafeteria and home making below. At one corner of the plot, a substantial small building was erected to serve during construction as the general contractor's job office; this later became the school shops. This is no campus plan; yet it has some characteristics of a campus. It is not a traditional colonial building, though it is in harmony with its locale. Its structure and detailing are also unconventional in that the roof is supported independently of the window walls, which are large panes of insulating double glazing with smaller vents beneath them; the concrete foundation is carried up all the way to the window sills. So simply and logically was this designed that, though unusual, it caused the general contractor no difficulty. Cost was $545,500, or $18,000 per classroom.

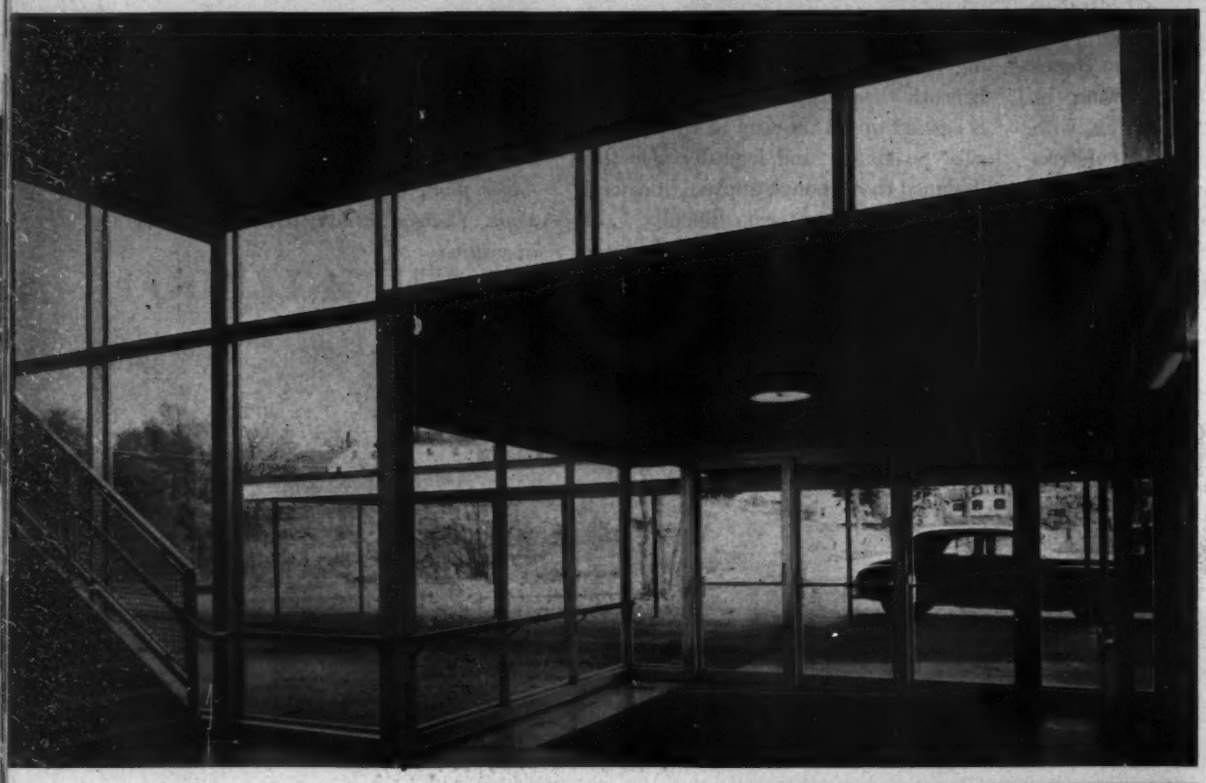


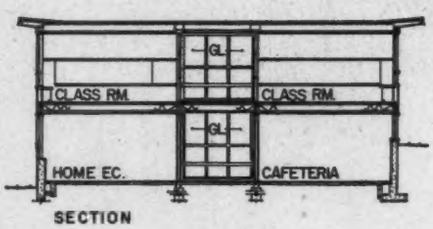
From inside spinal corridor of modified finger plan, classroom wings step down slope. Design virtually eliminated rock excavation

JUNIOR HIGH SCHOOL, BATH, ME. ***Alonzo J. Harriman, Inc., Architects-Engineers***

MAINE JUNIOR HIGH SCHOOL

Joseph W. Molitor





SECTION

Above, typical section through classroom wings. Large photo shows grade-level entrance and stairs from which most of school is reached. Small photos, top, administrative offices over lobby; at right, a classroom, homemaking room, and another classroom prepared for visual aids program

THE DESIGN OF STAINLESS STEEL CURTAIN WALLS

A Report on the Princeton Study
By John Hancock Callender, AIA
Research Associate, Princeton University

Curtain wall construction, only now coming into general use, has brought with it many new problems, both technical and esthetic. Recognizing this fact, the Committee of Stainless Steel Producers of American Iron and Steel Institute asked the School of Architecture of Princeton University to undertake a broad study of curtain walls, with particular emphasis on stainless steel. The work has been carried out over a two-year period under the direction of Robert W. McLaughlin, Director of the School. The report, of which this article is a summary, was presented in June and has been published by American Iron and Steel Institute.

THE MERIT of any curtain wall installation—in appearance, performance and cost—depends largely on how familiar the designer is with the basic properties and available forms of the material used. Such information on stainless steel has been made available through the Princeton Study which includes not only technical data and design recommendations, but original research on suggested panel designs and on the causes and cures of "waviness."

In many ways, stainless steel is an ideal curtain wall material. Probably its most familiar characteristic is corrosion resistance. This plus its high strength makes possible the use of light gages for economy. The use of light gages, however, coupled with the natural surface brightness means that minor variations produced in fabrication or handling are likely to be magnified, unless surfaces are broken up by changes in plane, by texture, or both. Corrosion resistance combined with workability allow the edges of panels to be formed into interlocking joints of excellent weatherproofness. Facts such as these will help the designer make the most of the potentialities of stainless steel for curtain wall panels.

What is a Curtain Wall?

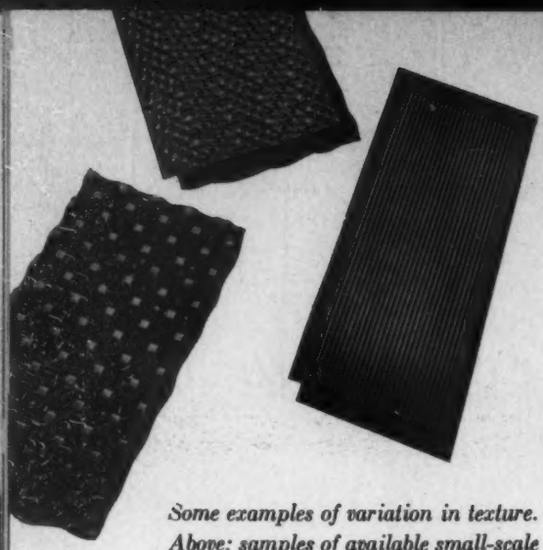
In the broadest sense of the word, any exterior wall that is not load-bearing is a curtain wall. In this sense, there have been curtain walls ever since the invention of the skeleton frame. Sheet materials need only to be backed with two or three inches of insulation and an interior finish to form a complete wall. Factory-made panels, complete with exterior and interior finish and insulation, are a logical solution to the problem and are the only type of construction entitled to be called "curtain walls" according to some authorities. This is the sense in which the term will be used in the present discussion.

The advantages of the curtain wall have been frequently pointed out and need only be noted here: reduction of dead load, gain in usable floor area, better insulation, speedy erection, no scaffolds, few joints, reduced maintenance. Most discussions of curtain walls are concerned with urban skyscrapers but it should not be forgotten that curtain walls are used on low buildings too—schools, hospitals, small office buildings, laboratories, motels, shopping centers, and especially industrial buildings. The total amount of curtain wall construction in these fields probably exceeds that in the more publicized field of the skyscraper.

The Ideal Curtain Wall

A performance specification for the ideal curtain wall would include the following items (values less than the ideal which would be acceptable in most cases are given in parentheses).

Durability: life 100 years (minimum 40).
Thickness: 2 in. (maximum 5).
Weight: 8 psf (maximum 15).
Insulation: U=0.05 Btu (maximum 0.15).
Fire Resistance: 2 hours (minimum, incombustible).
Strength: resist 150 mph wind (minimum 100).
Weatherproof: on outer face.
Vaporproof: on inner face.
Ventilated and Drained: for control of internal moisture, whether from condensation or from wind-driven rain.
Ventilated: for summer cooling.
Flexible: provide for expansion and contraction and building movement.
Removable: panels easily removable for repair or replacement.
Sound Transmission: reduction 50 db (minimum 25).
Sound Deadened: against impact of rain and wind.
Size: large units, 25 to 100 sq ft (minimum 10).
Adaptable: to all types of building framing, steel or reinforced concrete, simple or cantilevered.
Erection: installed from inside the building; no outside scaffolding required.
Attachment: simple and positive; adjustable in three dimensions.
Handling: easy, preferably by manpower.
Shipping: easy, by standard transportation.
Fabrication: simple; can be done in any reasonably equipped fabricating shop.
Appearance: attractive—no waviness, not too reflective, wide variety of textures and colors, weathers uniformly, self-cleaning.
Maintenance: none required—no painting, caulking or refinishing; cleaning not required for durability or appearance.
Cost: moderate—competitive with conventional construction; maximum $5 per sq ft in place.



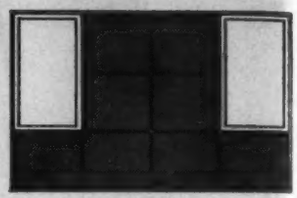
Some examples of variation in texture. Above: samples of available small-scale patterns. Below: different aspects of concave panels in actual use; width of panels is about 1 ft.

Photos on this page and foregoing page by Harold Corsini

BASIC CURTAIN WALL UNITS

Panels approximately square. Windows installed separately.

Vertical panel, including window or window opening.



Window-wall type, consisting of a grid of horizontal and vertical mullions. Spaces in grid may be filled either with solid wall panels or windows.

STAINLESS STEEL AS A FACING MATERIAL

Types and Structural Properties

Stainless steel is the generic name for a large family of alloys which are remarkably resistant to corrosion. The chromium-nickel alloys (300 series) are the best known and the most corrosion resistant. They are characterized by very high strengths and retain a remarkable amount of strength at high temperatures. Type 302 (17–19 per cent chrome, 8–10 per cent nickel) is the general purpose stainless steel and the one most often used, especially for outdoor applications on buildings.

The chromium alloys (400 series) also have high strength. Although somewhat less corrosion-resistant than the nickel-bearing steels, they have proven to be satisfactory for building use except along the seacoast. They are generally lower in price than the nickel-bearing alloys. Type 430 (14–18 per cent chromium) is the one most used in building work.

Stainless steel is available from the mill in coil stock or in cut sheets. Maximum widths available vary with the gage: the thinner the gage, the narrower the sheet. Since sheet width is often a critical factor in curtain wall design note should be taken of the following table of maximum widths for each gage:

Gage		Width
20	(.038 in.)	72 in.
22	(.031 in.)	66 in.
24	(.025 in.)	60 in.
26	(.019 in.)	49 in.
28	(.016 in.)	48 in.
30	(.013 in.)	38 in.
32	(.010 in.)	36 in.

Stainless steel sheet can be roll formed, pressed, bent, sheared, welded and soldered. Tooling costs for rolls and dies are considerable and these processes are economical only for mass-production. For a single building, or a group of buildings, brake-forming is usually the most economical fabricating method.

Finishes

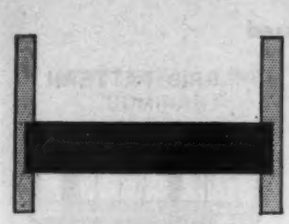
The standard finishes of stainless steel sheet are:

No. 2D — Dull cold rolled
No. 2B — Bright cold rolled
No. 4 — Polished
No. 6 — Polished and tampico brushed

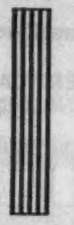
The cold rolled finishes are attractive in appearance and suitable for curtain wall use; they are furnished at no extra charge. The polished finishes are used where fine appearance is of paramount importance; they cost, depending upon gage, from 15 to 60 per cent more than the rolled finishes. For the facade of an entire building, these luxurious finishes are unnecessary and in the case of the No. 4 finish, undesirable because of high reflectivity.

Besides specular reflection, No. 4 finish exhibits a remarkable property of reflecting any light source, regardless of its shape, as a brilliant straight line. The line is always perpendicular to the direction of the polishing, regardless of the position of the sheet or the angle of incidence. It may appear on a building as a horizontal or vertical line, depending upon which way the sheet is installed. No. 2B finish shows a similar reflective effect, but to a much lesser degree. In this case the light source is reflected as a bright round spot with a thin straight line running through it. The duller finishes, No. 2D and No. 6 do not exhibit this property.

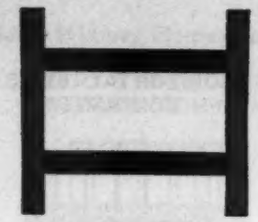
So far as is known, dirt accumulation is a property of the smoothness of the surface. Generally speaking, on a smooth vertical surface little dirt can collect and what does is easily washed off by the rain. For minimum dirt collection, smooth flat panels with flush joints and no projecting horizontal members are desirable. It should be remembered,



Horizontal panel extending from column to column. Windows installed separately.



Industrial type, suited to large unbroken walls. Vertical panels, interlocking. Windows and window frames installed separately.



Column and beam covers only.

however, that smooth, flat panels may collect less dirt but show it more. Any streaking or other irregular form of dirt-staining can be very disfiguring to a plain flat panel. Textured sheets will naturally tend to collect dirt, but the dirt accumulations generally accentuate the pattern and are thus less likely to be objectionable in appearance.

Texture

A wide range of textures is available to the designer of stainless steel curtain walls. Textured sheets are rolled with patterns ranging in depth from .005 to 1½ in. and in pattern width from ⅛ to 8 in. Patterns are of two general types — all-over and one-directional. The shallower patterns are usually called "embossed" and the somewhat deeper patterns are often referred to as "Rigidized," although it should be noted that this is a trade name. "Textured" has been used here to designate both types.

The deeper over-all patterns present something of a problem at the joints, particularly the vertical ones, which are difficult to make tight. One solution is to have the pattern stop short of the edges of the sheet, which remains flat and can be formed as desired. Or the edges of the textured sheet can be reflattened and then formed.

The one-directional patterns are generally referred to as "ribbed" or "fluted." Sections through the ribs may be rectangular, v-shaped, or curved. These patterns are very widely used, almost always in a vertical position. When so used they present few joint problems.

Textured sheets furnish rigidity, diffuse reflections, and conceal unevenness and other minor defects. They also play an important part in the final appearance of the building. By his selection of texture, the architect not only gives visual interest and character to the wall but more important he gives scale to the building as a whole. Textures of still larger scale can be obtained by the use of alternating panels of different depth or pattern. For a particularly important building, the architect may prefer to design a special pattern to be die-stamped in the sheet. This may be an expensive process, but it does give the architect complete control of the texture and scale of the building wall.

Color and Stainless Steel

At first thought, the application of color to stainless steel would seem to be a lily-gilding operation. The material has an attractive color of its own, which is subject to varying tonal effects through polishing and brushing. But one color, no matter how beautiful, is a limitation to the designer. There are naturally many times when a change of pace in color is highly desirable.

The ideal method of achieving permanently colored stainless steel would be the addition of color during the alloying process, but this appears to be impossible. Superficial colors have been obtained by treating the metal in hot vaporous solutions, but the durability of the result is questionable. A dull black surface which is apparently durable can be obtained by an oxide process. A good interplay of values can be achieved with this black finish by varying the amount of surface covered, resulting in various shades of gray as seen from normal viewing distances.

Permanent colors of unlimited range can be obtained by the use of porcelain enamel on stainless steel. Since the enamel is used for color only and not for protection from corrosion, only a single coat is required and it need not be continuous. Color can be applied in a spatter or other discontinuous pattern, thus permitting the natural luster of the stainless steel to show through. The same effect can be obtained on textured sheets by leaving the high points uncoated. These uncoated areas must be cleaned after firing, since heat discolors the surface of the metal. Using the low-temperature frits originally developed for use on glass and now used also on aluminum, thin stainless steel sheets coated on one side only showed no evidence of warpage after firing. If these preliminary results are confirmed, it will mean that a wall panel of stainless steel can be fabricated and then color can be applied only where it is desired, leaving the remainder of the panel in its natural state. This is not possible with any other metal.

Economy in the Use of Stainless Steel

The most obvious way to use stainless steel economically is to use it in as thin a gage as possible. The high strength of the material makes this feasible, if the proper techniques are employed, such as texturing and continuous backing.

For preliminary estimating purposes, the architect needs to know the price of stainless steel per square foot. Steel is priced by the pound and conversion to square feet is not simple because the price increases as the thickness decreases. For the guidance of the curtain wall designer the project staff had the following table of relative costs per square foot prepared by one of the major producers of stainless steel.

*RELATIVE SQUARE FOOT COSTS FOR STAINLESS STEEL SHEETS**

Gage No.	Weight, psf	Width, in. 36	48	60
14	3.281	1.00	1.02	1.10
16	2.625	.82	.84	.90
18	2.100	.66	.68	.74
20	1.575	.51	.53	.58
22	1.313	.44	.46	
24	1.050	.36	.39	
26	.788	.29	.32	
28	.656	.25	.29	
30	.525	.24		
32	.426	.22		

For greatest economy, serious consideration should be given to the use of Type 430 stainless steel, which costs 15–20 per cent less than Type 302. The Korean war caused the withdrawal

* *Based on a unit of type 302 No. 2D or 2B finish sheets in lengths of 60 to 120 in., paper unwrapped, quantities of 10,000 lb and over, as determined by one producer as o July 6, 1955. Factor of 1.00 arbitrarily assigned.*

of the nickel bearing alloys from the building market and resulted in the use of chromium alloys on several large buildings. Although not as highly corrosion-resistant as Type 302 and therefore not previously recommended for outdoor use, Type 430 has proven satisfactory in use in Pittsburgh, Cleveland, and other inland locations.

Economy in fabrication is of course just as important as in the selection of the type and gage of metal. Obviously, the simpler the fabrication, the lower the cost.

How Flat is Flat?

A problem common to all sheet metals is a tendency to be wavy when used in large flat panels. Although it is the nature of the material to behave in this manner, nevertheless waviness in metal curtain walls is generally considered to be objectionable in appearance.

Since there is no generally recognized standard for acceptable flatness, it was necessary to establish one. Therefore, we developed an instrument which could be used to obtain accurate profiles of building walls. This instrument was used to measure the flatness of a number of metal wall panels, some conspicuously wavy, others acceptably flat in appearance. It soon became apparent that the significant factor in the definition of visual flatness is not the height nor the number of waves, but the steepness of the slope.

After many tests the tentative conclusion was drawn that for smooth metals in the common finishes the threshold of acceptability seems to be a slope of about 1½ per cent, slightly less for the more reflective finishes, 2B and 4, and slightly larger for the duller finishes 2D and 6. There is some evidence that greater slopes can be tolerated in immediate proximity to a joint. The architect who wishes to insure visual flatness in curtain walls of stainless steel should specify maximum slopes of panel faces as installed in the building not to exceed the following:

No. 2B and No. 4 finish, 1.0%
No. 2D and No. 6 finish, 1.25%
Heavily textured finishes, 2.00%

What Causes Waviness?

The basic cause of waviness is structural instability of flat diaphragms. The specific reasons are not so well known. Possible causes of waviness, proven or suspected, are as follows:

1. Minor production variations.
2. Sheets not flat when shipped from the mill.
3. Unequal stresses resulting from fabrication.
4. Stresses resulting from erection (racking, warping, squeezing).
5. Expansion due to temperature rise.
6. Shrinkage of the backing can have the same effect as expansion of the face.
7. Movement of the building frame can rack or warp panels which were originally set plumb and level.

Of these possible causes of waviness, thermal expansion is most often cited, and this subject was therefore explored in some detail. Unbacked strips of stainless steel of various lengths and gages, with ends restrained, were subjected to the maximum temperature rise likely to be encountered in practice, and the resulting buckling was measured. As a result of these tests it was concluded that, in order to avoid objectionable buckling due to temperature rise in the design of flat, unbacked sheets of Type 302 stainless steel, the distances between supports or stiffening ribs should not exceed the following:

Thickness		No. 2B and	No. 2D and
Gage	Inch	No. 4 finish	No. 6 finish
20	.038	5.6 in.	7.5 in.
22	.031	4.7 in.	6.2 in.
24	.025	3.7 in.	4.9 in.
26	.019	2.9 in.	3.8 in.
28	.016	2.4 in.	3.2 in.
30	.013	1.6 in.	2.5 in.
32	.010	1.5 in.	2.0 in.

How to Prevent Waviness

The prevention of waviness cannot be guaranteed, but a number of measures can be taken that will greatly reduce the likelihood of distortion. For best results, use as many of these measures as may be applicable:

1. Avoid the use of large flat surfaces.
2. Avoid the use of reflective finishes.
3. Specify stretcher leveled sheets.
4. Use textured sheets.
5. Specify a system of attachment to the building that puts no strain on the panel and allows for some movement.
6. Specify that the face of the panel as installed in the building shall be flat within the limits described above.
7. Use continuous backing behind the metal skin, either by laminating it to a flat, board-like material or by pouring a cementitious material directly behind the metal face.
8. If a flat metal face is not backed continuously, then the distance between stiffening members should not exceed those recommended above.

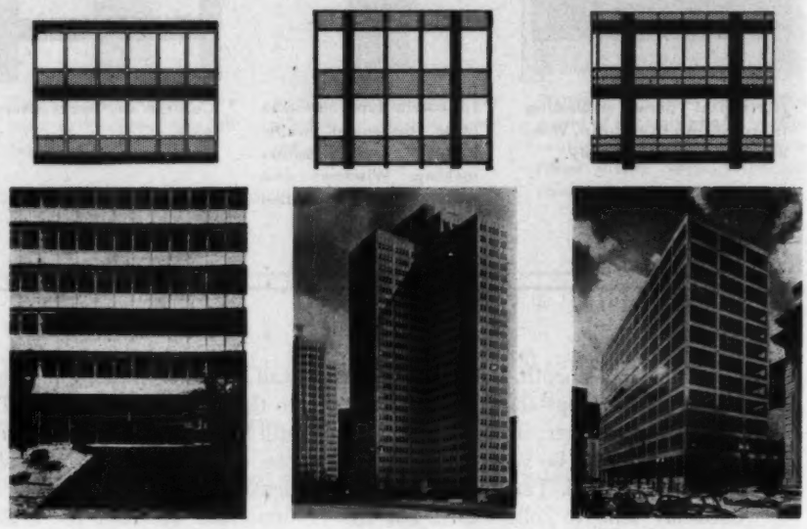
Lamination

The lamination of stainless steel (.010 to .025 in. thick) and other metals to plywood has been done successfully for many years. There appears to be no reason why the same principle cannot be used employing an incombustible board instead of plywood.

After conducting a number of experiments in this field, it was concluded that the lamination of thin stainless steel

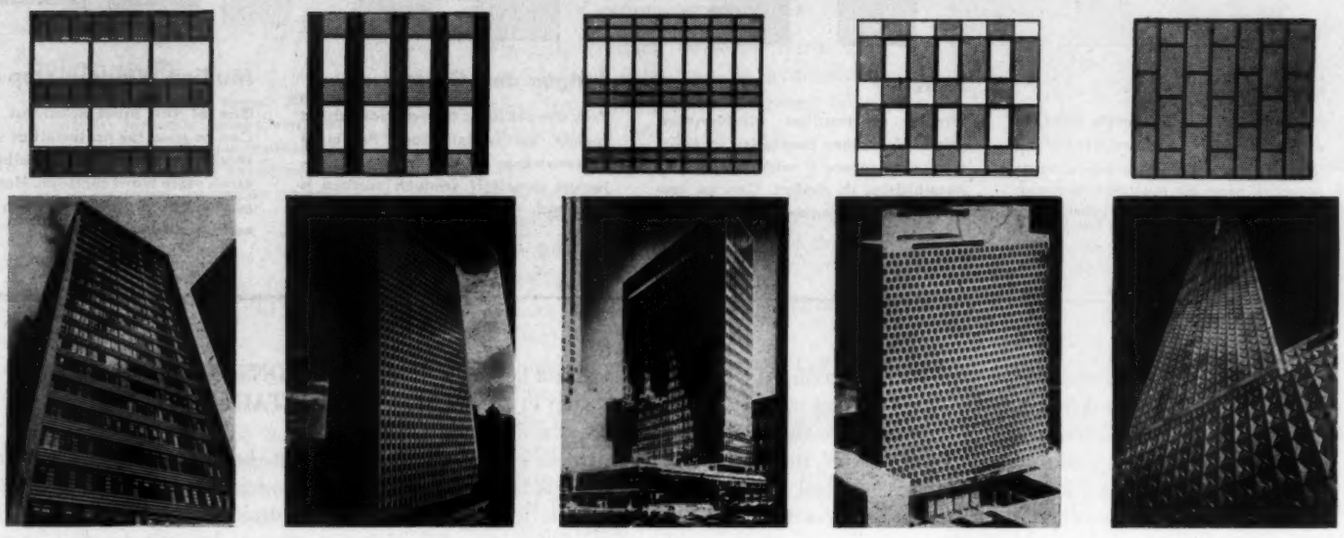
VISUAL ANALYSIS OF THE CURTAIN WALL FACADE

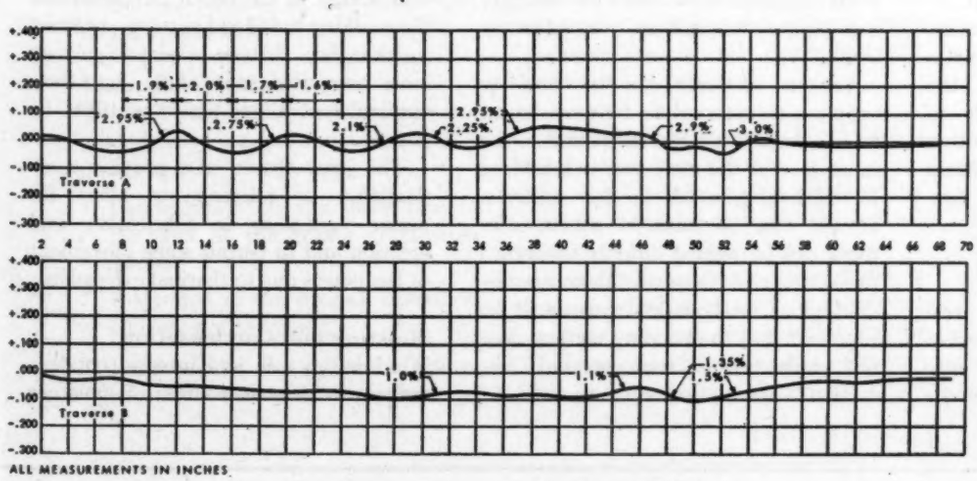
Structure Clearly Expressed



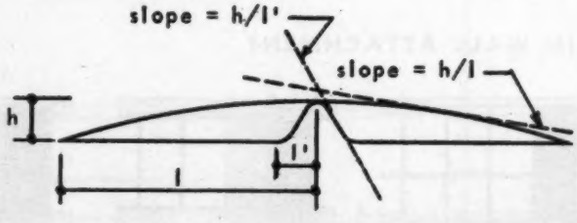
APPARENTLY A SINGLE PLANE

Structure Not a Primary Element of Expression


HORIZONTAL LINES DOMINANT
VERTICAL LINES DOMINANT
VERT. & HORIZ. LINES NEITHER DOMINANT
NON LINEAR PATTERN OF WALL & WINDOW
WINDOWLESS WALL



ALL MEASUREMENTS IN INCHES



Anthony Link

To develop criteria for "waviness," Princeton invented a special instrument (right) to measure deviations from flat plane. Top graph plots reading on objectionably wavy panel (photo left), bottom graph acceptably flat one; both are the same type. What counts is sleepness of slope (drawing above)

Interlocking Joints

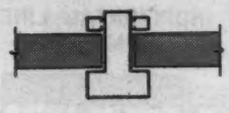
Commonly used for panels on large wall areas such as industrial buildings. Some joints not airtight; compromise may be required between ease of erection, building tolerances, cost, and a tight joint.

Batten

Similar to mullion window-stop joint. Has more flexibility in erection and offers a wide variety of possibilities in design. Can be one of the most expensive ways of joining materials.

Tongue and Groove

Very simple joint for erection which speeds up installation. Principal disadvantage is alignment of adjacent panels if smooth surface is required.



Mullion Window-stop

One of the most common joints. Can be used for materials of various thicknesses. Assembly possible from stock store front sections. Has many parts that require precision in assembly and installation.

sheets to asbestos-cement board, gypsum board, and calcium silicate board appears to be feasible, using adhesives of either the synthetic rubber or the epoxy resin type. Further study is needed before the method can be recommended for general use.

Instead of laminating stainless steel to a board whose sole function is to keep the metal flat, it would be more efficient to laminate it directly to the insulation. For this purpose, a rigid insulation is required, such as precast insulating concrete, calcium silicate board, or cement-excelsior board. Where combustible materials are permitted, foamed plastic, paper honeycomb, or fiberboard faced with asbestos-cement board, can be used. When the metal facing is laminated directly to the insulation, it is usually advisable to adhere the interior facing to the other side of the insulation, in order to obtain the benefits of sandwich panel construction.

Cementitious Backing

If insulating concrete is to be used as a core material, the possibility arises that it could be poured directly into the preformed metal facing, thereby saving the cost of the separate laminating operation. As a first step in the investigation of this subject, the strength of the natural bond between stainless steel and various cementitious backings was tested in relation to the forces of thermal expansion and shrinkage of the backing. These tests disclosed that although the natural bond between stainless steel and stone concrete was surprisingly good, the bond to lightweight concrete was poor and could not resist the stresses caused by the shrinkage of the concrete in curing or the thermal expansion of the facing. An adhesive of the epoxy resin type, applied to the stainless steel before the concrete was poured, resulted in a satisfactory bond.

Various methods can be used to supply a mechanical tie between facing and backup. Studs can be welded to the inner face of the steel panel and wired to reinforcing mesh in the concrete. In the case of textured panels, wire mesh can be welded directly to inward projecting ribs. Generally these are discontinuous methods and care must be exercised that the bonding method does not cause, rather than prevent, distortion.

OTHER CONSIDERATIONS FOR CURTAIN WALLS

Joints

Every joint between wall units is a potential source of trouble. The best method of designing a joint is to make it as weather tight as is humanly possible and then to assume that it will leak, and provide positive means for conducting the moisture out of the wall.

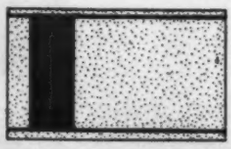
Joints may be made watertight by the sealing action of plastic gaskets, by interlocking or spring action in the joint itself, or by the periodic application of caulking compounds. This last is not recommended because the expansion and contraction of the metal panels causes the caulking to fail and requires constant maintenance. Rubber or plastic gaskets have been used successfully, but their survival over a long period is still to be proved.

The joint should also provide some flexibility or tolerance to allow for minor variations in fabrication and erection and to permit some movement of the panels due to thermal expansion.

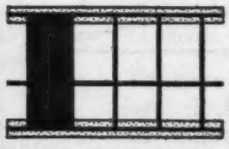
Moisture and Condensation

Wind-driven rain and internal condensation are the two sources of moisture

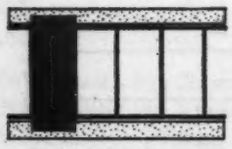
SYSTEMS OF CURTAIN WALL ATTACHMENT



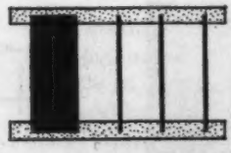
Elevation showing wall unit attached to unbroken surface by use of horizontal girts. Often used in remodeled construction.



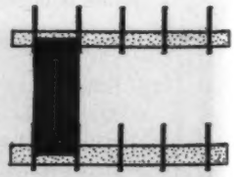
Wall units attached to a grid of vertical mullions and horizontal girts.



Wall units attached to mullions one story high and to horizontal girts or inserts at floor and ceiling.



Wall unit attached to mullions of one or two stories in height.



Wall unit attached to spandrel beam using stub mullions. The panel is actually cantilevered from the spandrel.

Spline Joints

One of the oldest types. Allows flexibility for replacement, removal and expansion. A disadvantage is the concentration of metal at one point requiring insulation against thermal "short circuit."

within walls. Whatever the source of the moisture, provision must be made for its disposal. The usual solution is to allow the moisture to collect by gravity and drain out at the base of the panel through weep holes. If the interior of the panel can be well ventilated, most of the moisture will evaporate. A channelled or ribbed section facilitates thermal ventilation.

In metal-faced panels backed up by cast-in-place poured materials, vertical channels should be provided to allow for drainage and ventilation. The moisture collected in these vertical channels may be joined to a drainage system within the building or may be drained through weep holes.

Through-Conductivity

Through-conductivity between inner and outer faces of a panel may cause several problems:

1. Condensation on the inner face of the wall at the points of through contact.
2. Reduction of the over-all insulation efficiency of the panel.
3. Reduction of fire resistance ratings because of excessive temperature rise at points of through metal contact.
4. "Ghost marks" on interior wall surfaces resulting from the different rates of dust accumulation on surfaces of various temperatures

Through contact between inner and outer metal faces can be avoided by using insulating gaskets at panel edges and points of internal bracing.

Insulation

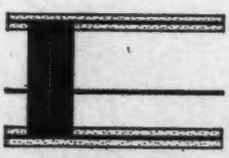
The ideal insulating material for curtain wall panels would have the following characteristics:

1. Low heat transmission (K = 0.25 Btu)
2. Light weight (10 lb per cu ft or less)
3. Large size (20–30 sq ft)
4. Rigid — for use as core material in sandwich panels
5. Fire resistant — capable of 1-hr rating for 2 in. thickness
6. Waterproof
7. Vapor proof
8. Non-corroding
9. Inexpensive (in range of 10¢ per sq ft, 1 in. thick)

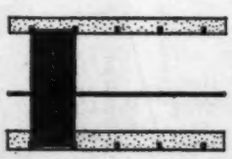
Since this ideal material does not exist, compromise is necessary. The material selected will depend upon the requirement of the particular job. Where considerable fire resistance is required, for example, lightweight aggregate concrete or gypsum must be used, although these materials are relatively heavy and poor insulators.

Attachment of Curtain Wall Panels to the Building Frame

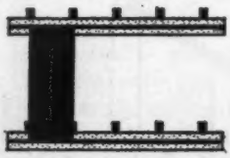
The metal curtain wall is produced by modern industrial methods and is characterized by a fairly high degree of dimensional precision. Since building frames, whether of steel or reinforced concrete, do not provide this degree of dimensional precision, it is necessary that an intermediate element be intro-



Wall unit attached to spandrel beam using horizontal girt at sill and horizontal girt or concrete insert in spandrel.

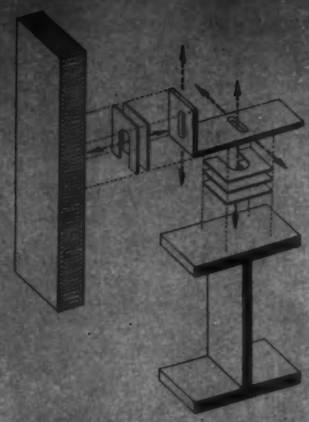


Wall unit attached to spandrel beam by use of plate clips at bottom of beam and a horizontal girt at sill height.



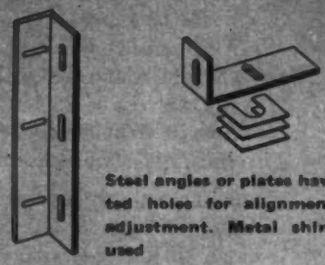
Wall unit attached to spandrel beam using shoe brackets and horizontal girts or concrete inserts.

ATTACHMENT

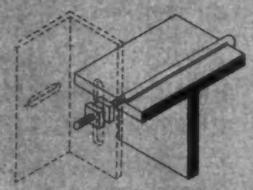


The method of fastening curtain wall panels to the building frame must provide adjustability in three directions

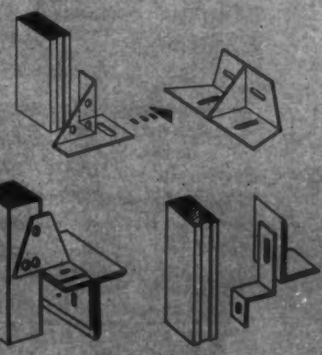
Fastening to Steel



Steel angles or plates have slotted holes for alignment and adjustment. Metal shims are used

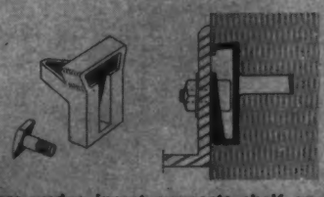


Hook-bolt with lock nut fastening is positioned then welded to the structural frame

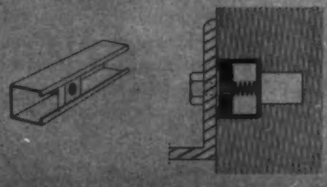


Custom designed bearing plates of light sheet metal provide positive fastening on the wall panel

Fastening to Concrete



Peerless wedge insert supports shelf angles for panel attachment; it is adjustable



Unistrut insert has continuous slot in the channel, permitting attachment anywhere along

duced between the wall panel and the structural frame to provide the required adjustment.

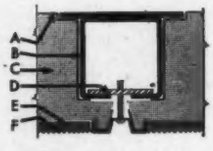
Attachment devices should meet the following requirements:

1. *Strength* sufficient to support the wall panels independently and prevent "stacking," which can cause buckling.
2. *Permanence* — attachment must not loosen as a result of building movement or thermal expansion of the wall panels.
3. *Adjustability* in three dimensions to permit correct alignment of wall panels.
4. *Corrosion resistance* equal to the life of the building.
5. *Fire resistance* sufficient to ensure that the wall panels will stay in place in the event of fire.
6. *Erection from interior* — important especially for multi-story buildings.

The method of panel fastening used should be kept as simple as possible, which will lead to economy in fabrication and erection.

PRINCETON EXPERIMENTAL CURTAIN WALLS

General Purpose System



A. 18 ga. carbon s. interior panel
B. carbon steel stud
C. insulation
D. threaded plate
E. asbestos cement board
F. 30 ga. textured s. s. panel

EXPERIMENTAL CURTAIN WALL DESIGNS[1]

General Purpose System

There exists a vast category of structures from one to three stories high, usually built without elevators and often not needing to be of highly fire-resistant construction. For this type of building, a practical structural system was developed at Princeton involving the use of steel studs approximately 4 ft on center, with panels and windows inserted as desired. A batten device, preferably flush, is the most practical method for holding the windows and panels in place. This basic system can also be used in multi-story buildings, the studs then becoming secondary framing for the attachment of wall panels and windows.

Multi-Story System

In multi-story buildings are to be found the most dramatic examples of curtain wall construction, although the greater volume lies in buildings of lesser height. The underlying design principle in any such curtain wall involves the arrangement of a series of panels and openings. A universally applicable system which exploits the inherent characteristics of stainless steel is highly desirable.

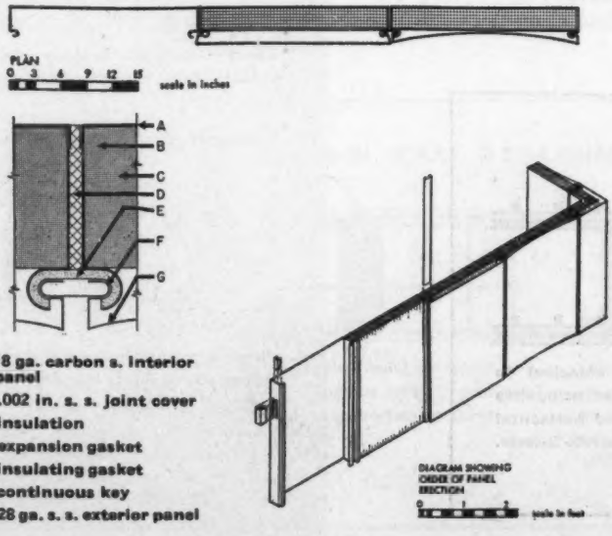
The suggested Princeton design emphasizes the capacity that stainless steel has for the weatherstripping of joints. It is used for that purpose in many windows made of other materials. In panels of stainless steel it is possible to form the edges of the panels so as to provide for interlocking joints of excellent weatherproofness without resorting to additional devices. There is considerable advantage in making a curtain wall system entirely of one material, without using plastic gaskets or caulking. This appears to be possible with stainless steel. The illustrations show merely a basic method. In practice, allowance must be made for expansion, and the panel surface would be better textured than flat.

Industrial System

Large areas of many industrial buildings need to be enclosed with a simple, economical and durable curtain wall. In general, systems now in common use were originally designed for metals other than stainless steel. The objective with the Princeton system is to capitalize on the inherent qualities of stainless steel. Its durability in lighter gages is coupled with the resilience which comes from its high yield strength. Formed panels of 16 to 18 gage carbon steel form the interior surface; in small buildings they may also act as bearing walls. Stainless steel sheets, 26 gage (28 gage if textured) are formed to fit into the openings formed by the interior panels. After exterior panels are inserted, 26 gage stainless steel keys are drawn down, fixing the panels in place and causing them to be shaped to a predetermined curvature. The curved section is of itself pleasing and serves to obscure any waviness or defects. Insulation may be applied as shown or may be adhered to the inside of the exterior panels. The latter method also adds stiffening and sound-deadening to the panel.

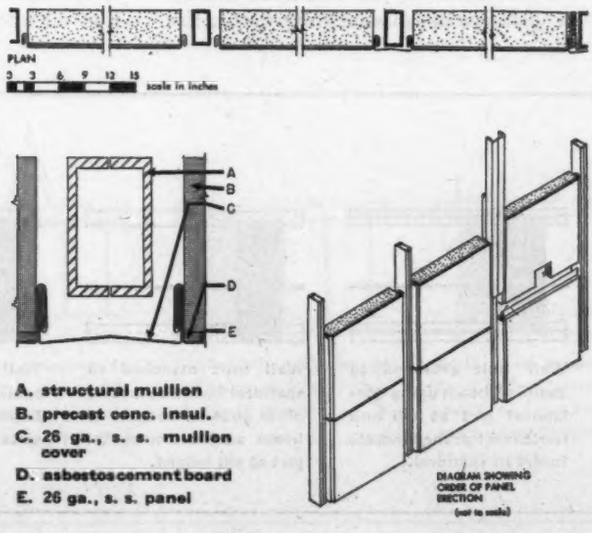
[1] *These experimental designs are the property of Princeton University; patent rights are reserved.*

Industrial System



A. 18 ga. carbon s. interior panel
B. .002 in. s. s. joint cover
C. insulation
D. expansion gasket
E. insulating gasket
F. continuous key
G. 28 ga. s. s. exterior panel

Multi-story System



A. structural mullion
B. precast conc. insul.
C. 26 ga., s. s. mullion cover
D. asbestos cement board
E. 26 ga., s. s. panel

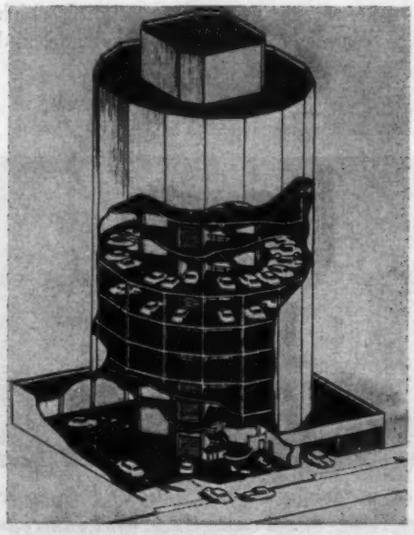
"ROTATING" GARAGES PROVIDE MAXIMUM PARKING SPACE ON A SMALL CITY PLOT

Solutions to the parking problem in large, congested, metropolitan areas have been offered by two New York City firms. Although each has elements separate and distinct from the other, both have basic features that are essentially the same:

1. Automation is the key to handling a large volume of cars in a minimum amount of time.
2. High-speed elevators carry cars to pre-selected parking levels.
3. Rotating circular floors line up preselected parking slots in front of the elevators.

Both the "Gyro" parking garage and the Rotogarage are cylindrical structures rising from a square base and topped by an elevator penthouse. The framework of both garages is of steel, and the façade can be of any material. Provision is made at ground level of the Gyro garage for stores and other retail establishments.

The Gyro Parking Garage, it is claimed by its designers, "will park and unpark more cars faster and at a lower cost to customers than any other garage structures yet devised." At capacity, a 12-story structure (the tallest practical) on a 200 ft square base, will hold about 1200 cars, double the amount that could be accommodated in the same space in a ramp-type garage.



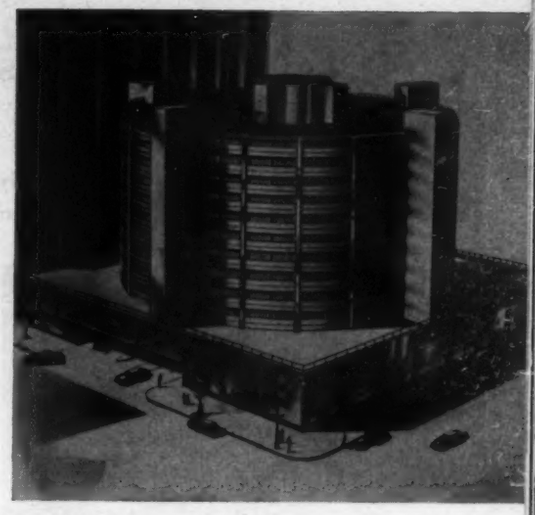
The Rotogarage uses only one ring. A dolly lifts cars into one of four elevators

Each floor of the Gyro garage comprises three concentric rings of parking stalls served by eight high-speed elevators. Each of the three rings on every parking level is operated independently of the other rings through an electronic "memory" system. This electronic coding device is the brains of the entire parking operation.

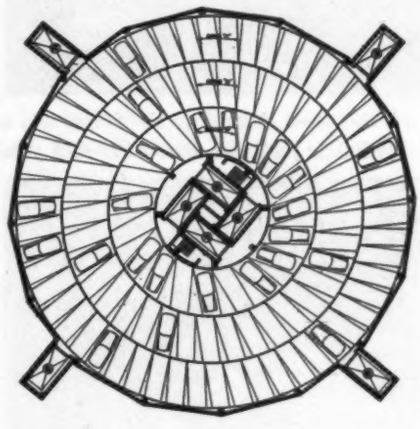
Each car which enters the main floor marshalling area is tagged with a claim check specially numbered to correspond to an empty stall on one of the parking levels. An attendant drives the car to whichever of the eight elevators is waiting and, reaching through the car window to the elevator control panel, presses buttons which correspond to the number on the claim check. At this point the "brain" takes over, setting the rings on the preselected floor in operation. When the elevator has reached that floor, all three rings are in position so that the car can be driven straight out of the elevator into the proper stall, whether it be in the first, second or third ring. One car slot is always left open in each inner ring, two in each middle ring, and three in each outer ring, so that they can be used for access to other rings.

The unparking operation is essentially the same as parking. The claim check stub, presented by the customer, is shot through a pneumatic tube to an attendant. He again presses the corresponding numbers on the elevator panel board, and the car is in direct line with the elevator when it arrives at the proper floor. Parking or unparking one car is estimated to take less than 1 min. On the basis of that estimate, the garage could discharge an average of eight cars a minute, or 480 an hour. Designer of the Gyro Garage is the Arena Parking Garages Co. of New York City.

The Rotogarage is even more automatic than the Gyro garage, in that the cars are actually parked automatically, but has only one rotating parking ring. After the car has been received and ticketed by an attendant, it is lined up in front of one of the elevators. The attendant pushes buttons with the indicated letter-number combination, and the selected parking level rotates so that the proper stall is in position in front of the elevator shaft. The



The Gyro parking garage has three concentric rings served by high-speed elevators



pushing of a second button sends a parking dolly out from the elevator and under the waiting car, lifting it slightly and moving it forward into the elevator. The car is carried to the right level and then deposited, again by the dolly, in the proper stall on the rotor. The dolly withdraws into the elevator, which descends to the ground floor and is ready for another trip.

The estimated average elapsed time for a parking cycle is about 48 sec. Because the actual car parking is automatic, only one or two attendants are required, even at peak parking hours. The cylindrical Rotogarage is 100 ft in diameter, based on a 100- by 100-ft ground floor. Each of the eight floors has slots for 60 cars, making an over-all capacity of 480 for the entire structure.

The Rotogarage is patented by Albert F. Buranelli of New York and will be erected by Rotogarages-New York, Inc., of which Guy B. Panero, consulting engineer, is chairman of the board and Richard M. Nesbitt is president.

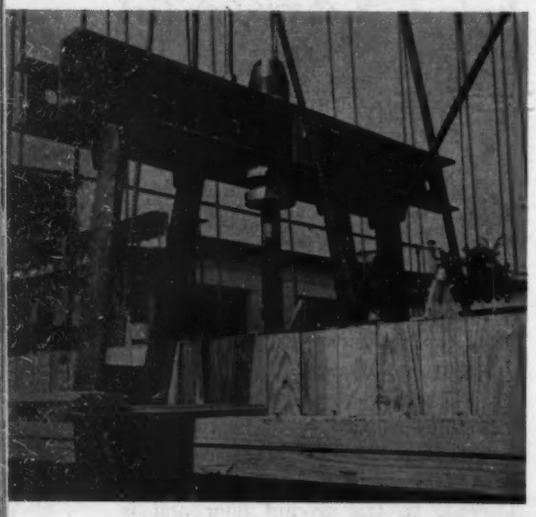
AT&T Relay Tower
Lorimer & Rose, Architects & Engineers

Madison Towers
John H. Doggett, Architect
Courtesy Portland Cement Association

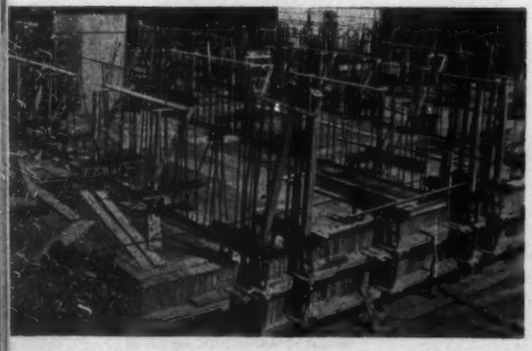
SLIP-FORM CONSTRUCTION SPEEDS ERECTION OF APARTMENT HOTEL

Commonly used in silos, water tanks and towers, this method has saved both time and money in its first application to a large, "human-occupancy" building

Yokes were clamped to the forms, and a hydraulic jack was attached to each yoke



Interior walls subdivided the building into a series of 20 sections 13'6" by 30'9". Steel lifting rods around perimeter were attached to jacks, which were connected by hydraulic tubing to central motor



Construction history has been made in Memphis, Tenn. The 10-story Madison Towers apartment hotel was erected using the slip-form concrete pouring method, marking the first time this method has been used in the United States for such a building type.

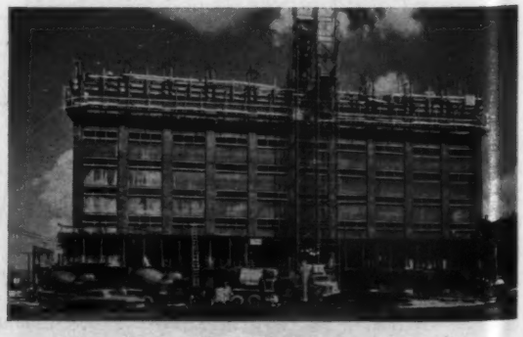
John H. Doggett, architect, and S. S. Kenworthy, structural engineer, estimate that the slip-form method saved about 10 per cent in the cost of the building and made it available for use 3 to 5 months sooner than it would have been had conventional concrete pouring methods been used for other than the basement and first two floors. The slip forms, about 4 ft deep, were placed at the third-floor level for continuous concrete pouring of the top eight floors. The last concrete was poured on the top floor only 114 hr later.

As shown in the series of construction shots on this page, hydraulic jacks — 210 of them — lifted the slip forms up on jack rods about an inch at a time, carrying the working platform with them. Concrete was allowed to set but not fully harden in the forms before the jacks were inched up again. The average rise per hour was about 6 to 8 in.

Both exterior and interior walls, 8½ in. thick, were poured at the same time on the way up, including those for stairwells, elevator shafts and smokestacks. Steel reinforcing rods were lifted to the working platform and wired together as the building progressed. Openings for 26 windows, 22 doors and 18 working openings were left on each floor by means of forms inserted within the slip forms. Also about 400 small openings were left on each level for anchoring the concrete floor, which was poured later. Scaffolding followed the slip forms up the building so that workmen could finish the concrete while it was still wet.

When the walls were finished, the roof of the building was poured directly on the working platform. Holes were left in the roof for supports for another platform, constructed in each of the "cells" between the interior walls. It was lowered gradually to each level for the pouring of the other floors. This operation took about 8 weeks.

When Madison Towers is ready for occupancy, it will consist of 159 air-conditioned efficiency apartments. With the exception of the ground floor, which will be veneered in Travertine marble, the exterior will be waterproofed in pastel green to contrast with the aluminum fenestration. The building will have three levels for parking and a tile-paved promenade on the third floor leading to a recreation deck. The shear walls will ensure a strong building which is claimed to be both hurricane and bomb resistant.



(Left) Concrete finishers followed the forms on a hanging scaffold. (Right) Five floors of concrete walls were exposed on the fourth day. Ready-mixed concrete and other materials were lifted in the hoist and adjoining freight elevator. Windows were framed with 2X8's

(Roundup continued on page 260)

Madison Towers
John H. Doggett, Architect
Courtesy Portland Cement Association

ELECTRIC HEAT

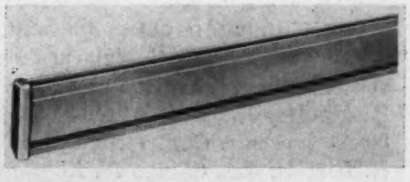
Manufacturers of electric heating units, competing for the heating market with oil, gas and coal heater manufacturers, are claiming cleanliness, absence of odor and noise and ease of installation for their products. Low surface temperatures, permitting placing of furniture and drapes close to the units, are being emphasized

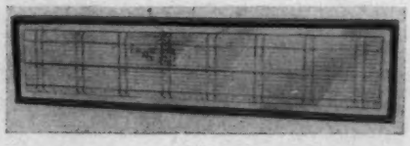
Glassheat Electric Radiant Heating is provided by specially designed glass heating panels. The special Blue Ridge glass goes through three tempering processes for strength and shatterability. An aluminum alloy element is fused onto the back of the glass panel, and over this heating grid is sprayed a silicon coating to protect the element from water, moisture, etc. Approximately 80 per cent of the heat produced by the aluminum element passes through the glass and into the room. The glass panel fits into a reflector pan and an aluminum back pan, between each of which is an air space, so that the small amount of convection heat which is produced can escape into the room. Infra-red rays which escape backwards are reflected back through the glass into the room. At any time during operation the back pan, next to the wall, is cool, and the glass surface can be touched. The surface-mounted or recessed panels are available in capacities of 650 or 1000 watts. The manufacturer claims that in any area in which the electrical rate is 2 cents per kwh or less, the cost of operating Glassheat compares favorably with conventional heating systems and is cheaper to install. The installation above shows two Glassheat wall panels in a dining room. *Continental Radiant Glass Heating Corp., 1 East 35th St., New York 16, N. Y.*

Chromalox Radiant Wall Panel is an all-metal panel which is guarded against moisture and rough usage. The heating element is a nickel-chromium resistor wire, packed in a high-density insulating refractory and totally enclosed in seamless tubing, which is run back and forth across the back of a radiant heating plate and permanently bonded to it. Ends of the wire are enclosed in a built-in terminal box and sealed against moisture leakage. An on-off switch and adjustable thermostat control, plus a line terminal enclosure for connection to the power source, are enclosed within the bottom panel frame. The panel measures 28 in. wide by 23 in. high and extends 3 in. from the wall. Several combinations of wattages give balanced radiation: 1000 watts for use with either 210 or 240 volts and 1500 watts for 240 volts. *Edwin L. Wiegand Co., 7500 Thomas Blvd., Pittsburgh 8, Pa.*

Electromode Cable Heat is supplied by electric heating cables which are installed either in plaster or dry-wall ceilings or in concrete floors. The heating cables, waterproof and non-corrosive, are covered with plastic insulation and a jacket of nylon to prevent chemical reaction with the plaster and thus eliminate ceiling streaks. The cable is stapled to the ceiling lath, gypsum board or sheetrock, as shown in the cutaway drawing, then covered with plaster or dry wall. The cables are available in capacities from 300 to 4600 watts. *Electromode Corp., 45 Crouch St., Rochester 3, N. Y.*

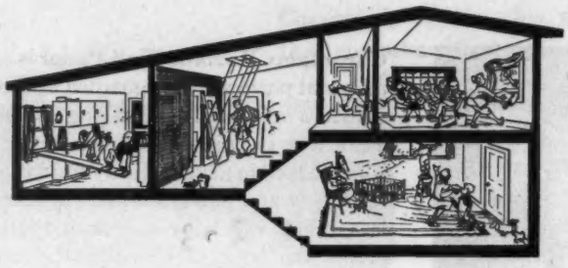
Cavalier Electric Baseboard (shown below) encloses electric heating elements behind a face of heat-reflecting, aluminized steel. Zig-zag air passes channel the air over the heating elements, and reflective baffles increase the flow of warmed air. The manufacturer claims that the surface of the unit remains below 125 F. The temperature of each room equipped with this baseboard is controlled separately by an automatic thermostat. The baseboard is available in two lengths, 32 and 48 in. Units are 6 in. high, $2\frac{1}{16}$ in. thick and have a capacity of 160 watts per foot. *Cavalier Corp., Electric Heating Div., Chattanooga 2, Tenn.*





Infraglass Heaters are produced in baseboard (shown below left), wall panel and portable models. Baseboard units are supplied in two capacities, 1050 and 1550 watts. Wall panels come in four models, ranging from 800 to 1050 watts capacity. All are manufactured for 115 volts, although models can be ordered for 245 volts. *Infraglass Heater Co., Inc., Dept. 206, 350 S. Sanford St., Pontiac, Mich.*

(*More products on page 272*)



PLASTICS IN HOUSING

In an effort to determine how plastics might fit into dwelling house design, a continuing evaluation has been in progress at the Massachusetts Institute of Technology under a project sponsored by the Monsanto Chemical Co. (see "Applications of Plastics in Building," by Prof. A. G. H. Dietz, in the August *AR*, pages 197–202). The results of the first year of study are presented in a comprehensive 70-page book, prepared by the Department of Architecture at M.I.T., which lists properties and current uses of plastics in housing. Uses covered are foundations and structures, walls and roofs, flooring, openings, ceilings, partitions, mechanical equipment, storage and furnishings. One of the most interesting sections discusses potential uses, including solar heated houses, domes, stabilized earth housing and the molded modular bathroom. Copies of the report are available at $2.00 per copy from *Monsanto Chemical Co., Plastics Div., Springfield 2, Mass.*

Laundry Machinery. A catalog containing about 88 typical floor plans for commercial, hospital and hotel laundries also includes foundation plans and photographs of models of typical layouts as well as data sheets on electrical installation, motors, and boilers. *Troy Laundry Machinery, Div. of American Machine and Metals, Inc., E. Moline, Ill.*

Aluminum. Reynolds Architectural Aluminum Portfolio presents 99 pages of information, sizes, weights, alloys and tempers of a large variety of aluminum products for building. *Reynolds Metal Co., 2500 S. 3rd St., Louisville, Ky.**

Formica Kit. A kit containing standard literature, specifications and color swatches of the entire line of Formica colors and patterns can be obtained from *The Formica Co., 4614 Grove Ave., Cincinnati, Ohio.**

Propeller Fan. Information on two new fans as well as specifications, dimensions and performance figures are given on a line of industrial ventilating fans in a 40-page, illustrated catalog. *Hartzell Propeller Fan Co., Piqua, Ohio.*

Plastic Upholstery. A design manual lists the decorative and functional features of an elastic fabric-back plastic upholstery and gives swatches. *Masland Duraleather Co., Philadelphia 34, Pa.*

Restroom Fixtures. A 16-page brochure, cleverly illustrated, describes the health advantages of off-the-floor restroom fixtures. *J. A. Zurn Mfg. Co., 1801 Pittsburgh Ave., Erie, Pa.**

Mahogany Finishes. An 8-page folder illustrating in color the various finishes for use on Philippine mahogany gives the formulas used in obtaining them. *Philippine Mahogany Assoc., Inc., 111 W. 7th St., Los Angeles 14, Calif.*

Subveyors and Dish Tray Conveyors. A 36-page catalog lists specifications and applications of various types of subveyors and dish conveyors and includes detail drawings, photographs and typical plans. *Samuel Olson Mfg. Co., Inc., 2418 Bloomingdale Ave., Chicago 47, Ill.**

Dish Dispensers. A planned system for automatic dispensing and storage of dishes, trays, glasses, juices, butter and bread is discussed in a 22-page, illustrated booklet that contains descriptions as well as specifications. *Louverator Div., American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.*

Staining Wood. Architect's Bulletin No. 5, 4 pages, gives illustrations and information on Southern Pine finishes and paneling. *Southern Pine Assoc., New Orleans, La.*

Whiteprinter. An automatic whiteprinting machine that prints and develops white prints at speeds up to 70 fpm is described and illustrated in an 8-page brochure. *C. F. Pease Co., 3906 N. Rockwell Ave., Chicago 18, Ill.*

Door T-Frame. A 4-page folder describes and illustrates all-steel pocket door T-frames for all standard interior door requirements. *Sterling Hardware Mfg. Co., 2345 Nelson St., Chicago 18.**

Rigid Steel Electrical Conduit. A booklet including test data sheets showing how rigid steel electrical conduits stand up under salt spray, sulfuric acid, caustic soda and exposure to excessive heat may be obtained from *National Electric Products Corp., Gateway Center, Pittsburgh, Pa.**

Mercury Vapor Lamp Transformer. Bulletin MV-211 gives the general characteristics, performance and most recent specifications on the Sola mercury vapor lamp transformers for indoor industrial and commercial use. *Sola Electric Co., 4633 W. 16th St., Chicago 50.*

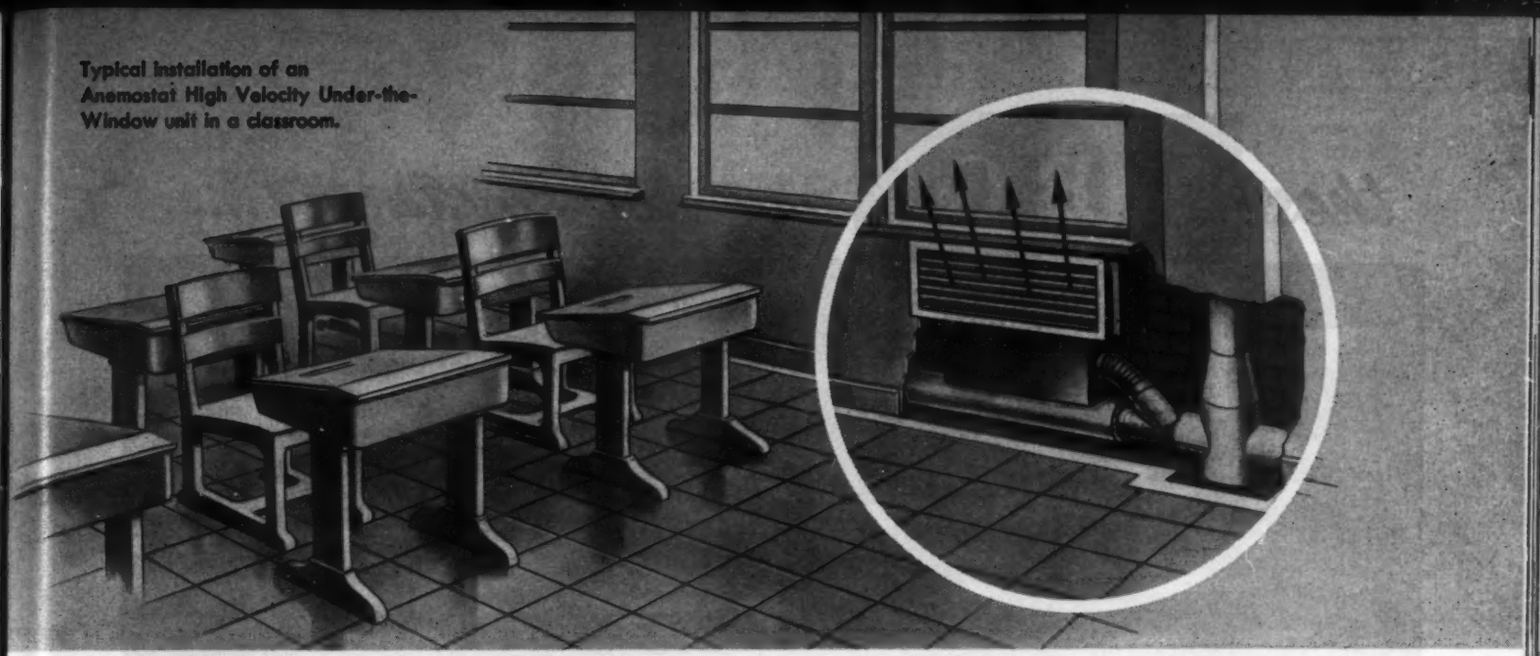
Prestressed Concrete. Tables of loadings for prestressed concrete products covering double-tee roof slabs, floor channels, bridge decks, piling and bleacher seats are available from *LEAP, P.O. Box 495, Lakeland, Fla.*

Silicone Masonry Water Repellents. A 16-page manual explains the qualifications of silicone masonry water repellents as well as their limitations and waterproofing performances. *Wurdack Chemical Co., 4977 Flyer Ave., St. Louis 9, Mo.**

Soap Dispensers. A catalog illustrating and describing a complete line of soap dispensers, including liquid, lather and powder soap dispensers as well as gravity feed systems, is available from the *American Dispenser Co., Inc., 115 E. 23rd St., New York 10, N. Y.**

**Other product information in Sweet's Architectural File, 1955.*

(Continued on page 320)



Typical installation of an Anemostat High Velocity Under-the-Window unit in a classroom.

How to deliver

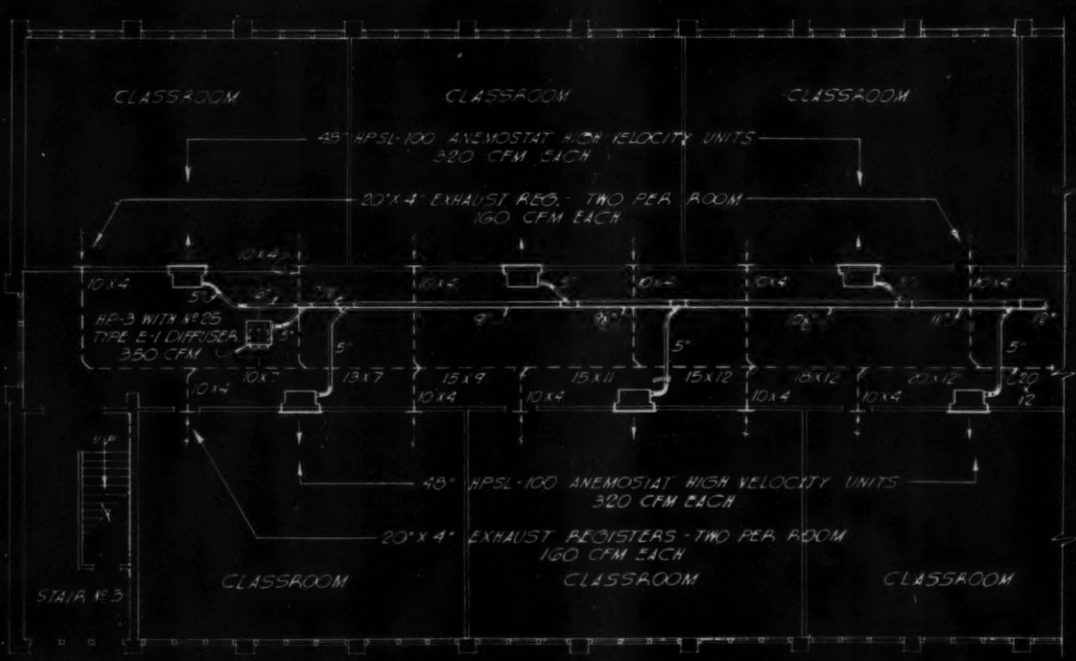
high velocity air to schoolrooms

Shown here are two ways of using the Anemostat All-Air High Velocity system of draftless air distribution for heating and ventilating schools. Under-the-Window units (above) are the most practical for colder climates. Corridor distribution (below) is preferable in warmer climates.

Advantages:

- All-Air High Velocity units require smaller than conventional ducts, thus save space and money.
- All-Air HV units can be used for individual or zone control, in single or dual duct installation.
- Since air is supplied from the main equipment room, there is no need to break through the outside of the building for prime air make-up. This eliminates grilles, dampers, possibility of leaks.
- The Anemostat All-Air HV system can be simply installed by the sheet metal trades. No supply or return pipes are required. Units are quiet, need a minimum of maintenance from custodians.

For latest data on All-Air High Velocity units, write on your business letterhead for new Selection Manual 50 to Anemostat Corporation of America, 10 E. 39 Street, New York 16, N. Y.



Diagrammatic layout shows corridor distribution of high velocity air for wing of school.

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CASE INSTITUTE
CLEVELAND,
OHIO

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Here is lighting that does more than provide light. These A B C's provide proper levels of appropriately controlled brightness by utilizing more than a half century of illuminating engineering experience, distinctive design, and skilled manufacture.

The low-brightness troffers used to provide optimum seeing conditions in the physics laboratory of the Case Institute utilize these Curtis A B C's. The reflectors of Alzak Aluminum, processed after forming in the newly constructed Curtis Alzaking plant, are but one of many Curtis features that assure the Case Institute countless years of highly efficient illumination at low operating and maintenance costs.

Write Dept. K3-CI for literature on this and other Curtis luminaries.

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Leaside, Toronto 17, Ont., Canada

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THERMAL INSULATION—12: U Factors for Flat Roofs

By Laurence Shuman, Consulting Engineer

Legend:

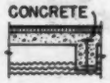
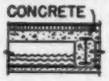
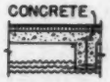
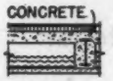
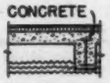
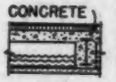
Insulation on Roof Deck

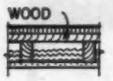
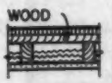
- **A** None
- **B** ½″ insulation board
- **C** 1″ insulation board
- **D** 1½″ insulation board
- **E** 2″ insulation board
- **F** 1″ corkboard
- **G** 1½″ corkboard
- **H** 2″ corkboard

Ceiling Finishes

- **7** 1 sheet aluminum under air space at least 7½″, no ceiling
- **8** Aluminum foil back-up on lath, plaster ceiling
- **9** 2 sheets aluminum foil, two air spaces, no ceiling
- **10** Aluminum foil back-up on lath and 1 sheet foil, two air spaces, plastered
- **11** 3 sheets aluminum foil, three air spaces, no ceiling
- **12** Aluminum foil back-up on lath, 2 sheets foil, three air spaces, plastered

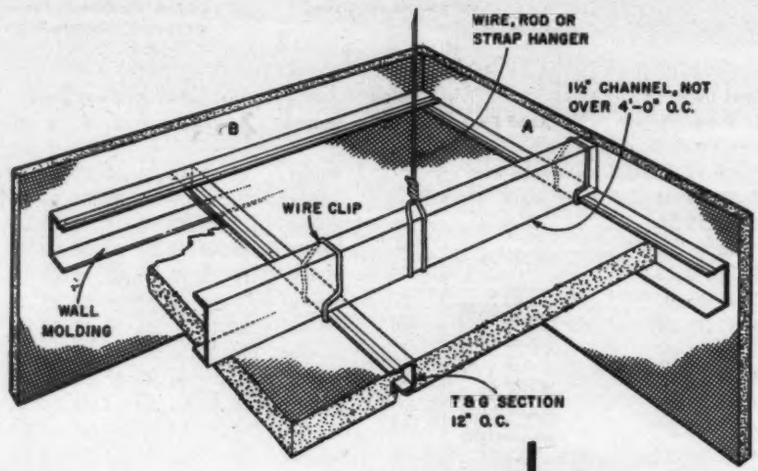
ROOFING
INSULATION
CEILING

Roof Deck	Ceiling Finish	Season	Insulation on Roof Deck A	B	C	D	E	F	G	H
Metal roof deck	7	Winter	.30	.21	.16	.13	.11	.15	.12	.10
		Summer	.10	.08	.07	.07	.06	.07	.06	.06
	8	Winter	.30	.20	.16	.13	.11	.15	.12	.10
		Summer	.11	.09	.08	.07	.07	.08	.07	.06
	9	Winter	.19	.15	.12	.10	.09	.12	.10	.08
		Summer	.07	.07	.06	.05	.05	.06	.05	.05
	10	Winter	.19	.15	.12	.10	.09	.12	.10	.08
		Summer	.08	.07	.06	.06	.05	.06	.06	.05
	11	Winter	.14	.11	.10	.08	.07	.09	.08	.07
		Summer	.06	.05	.05	.05	.04	.05	.04	.04
	12	Winter	.13	.11	.10	.08	.07	.09	.08	.07
		Summer	.06	.06	.05	.05	.04	.05	.05	.04
Concrete roof deck 2″ thick	7	Winter	.29	.20	.15	.14	.11	.14	.12	.10
		Summer	.10	.08	.07	.07	.06	.07	.06	.06
	8	Winter	.28	.20	.15	.14	.11	.14	.12	.10
		Summer	.11	.09	.08	.07	.06	.08	.07	.06
	9	Winter	.19	.14	.12	.10	.09	.11	.09	.08
		Summer	.07	.06	.06	.05	.05	.06	.05	.05
	10	Winter	.18	.14	.12	.10	.09	.11	.09	.08
		Summer	.08	.07	.06	.06	.05	.06	.06	.05
	11	Winter	.13	.11	.09	.08	.07	.09	.08	.07
		Summer	.06	.05	.05	.05	.04	.05	.04	.04
	12	Winter	.13	.11	.09	.08	.07	.09	.08	.07
		Summer	.06	.06	.05	.05	.04	.05	.05	.04
Concrete roof deck 4″ thick	7	Winter	.27	.19	.15	.14	.10	.14	.11	.10
		Summer	.10	.08	.07	.07	.06	.07	.06	.06
	8	Winter	.27	.19	.15	.14	.10	.14	.11	.10
		Summer	.11	.09	.08	.07	.06	.08	.07	.06
	9	Winter	.18	.14	.12	.10	.08	.11	.09	.08
		Summer	.07	.06	.06	.05	.05	.06	.05	.05
	10	Winter	.18	.14	.11	.10	.08	.11	.09	.08
		Summer	.08	.07	.06	.06	.05	.06	.06	.05
	11	Winter	.13	.11	.09	.08	.07	.09	.08	.07
		Summer	.06	.05	.05	.04	.04	.05	.04	.04
	12	Winter	.13	.11	.09	.08	.07	.09	.08	.07
		Summer	.06	.06	.05	.05	.04	.05	.05	.04
Concrete roof deck 6″ thick	7	Winter	.26	.19	.15	.13	.10	.14	.11	.09
		Summer	.09	.08	.07	.06	.06	.07	.06	.06
	8	Winter	.26	.19	.14	.12	.10	.14	.11	.09
		Summer	.10	.09	.08	.07	.06	.08	.07	.06
	9	Winter	.17	.14	.11	.10	.08	.11	.09	.08
		Summer	.07	.06	.06	.05	.05	.06	.05	.05
	10	Winter	.17	.14	.11	.10	.08	.11	.09	.08
		Summer	.08	.07	.06	.06	.05	.06	.05	.05
	11	Winter	.13	.10	.09	.08	.07	.09	.08	.07
		Summer	.06	.05	.05	.04	.04	.05	.04	.04
	12	Winter	.13	.10	.09	.08	.07	.09	.08	.07
		Summer	.06	.05	.05	.05	.04	.05	.05	.04

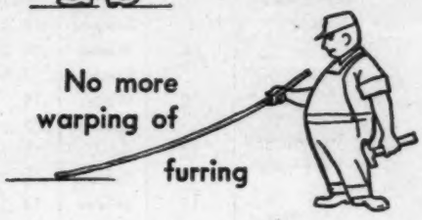
Roof Deck	Ceiling Finish	Season	Insulation on Roof Deck A	B	C	D	E	F	G	H
Wood roof deck 1″ thick	7	Winter	.22	.17	.13	.11	.10	.13	.11	.09
		Summer	.09	.08	.07	.07	.06	.07	.06	.06
	8	Winter	.22	.17	.13	.11	.10	.13	.11	.09
		Summer	.10	.09	.08	.07	.06	.07	.07	.06
	9	Winter	.16	.13	.11	.09	.08	.10	.09	.08
		Summer	.07	.06	.06	.05	.05	.05	.05	.05
	10	Winter	.16	.13	.11	.09	.08	.10	.09	.08
		Summer	.07	.07	.06	.05	.05	.06	.05	.05
	11	Winter	.12	.10	.09	.08	.07	.08	.07	.06
		Summer	.05	.05	.05	.04	.04	.05	.04	.04
	12	Winter	.12	.10	.09	.08	.07	.08	.07	.06
		Summer	.06	.05	.05	.04	.04	.05	.04	.04
Wood roof deck 1½″ thick	7	Winter	.21	.16	.13	.11	.09	.12	.10	.09
		Summer	.09	.08	.07	.07	.06	.07	.06	.05
	8	Winter	.21	.16	.13	.11	.09	.12	.10	.09
		Summer	.09	.08	.07	.07	.06	.07	.06	.06
	9	Winter	.15	.12	.10	.09	.08	.10	.08	.07
		Summer	.07	.06	.05	.05	.05	.05	.05	.05
	10	Winter	.15	.12	.10	.09	.08	.10	.08	.07
		Summer	.07	.06	.06	.05	.05	.06	.05	.05
	11	Winter	.11	.10	.08	.07	.07	.08	.07	.06
		Summer	.05	.05	.04	.04	.04	.04	.04	.04
	12	Winter	.11	.10	.08	.07	.07	.08	.07	.06
		Summer	.06	.05	.05	.04	.04	.05	.04	.04
Wood roof deck 2″ thick	7	Winter	.19	.15	.12	.10	.09	.11	.10	.08
		Summer	.08	.07	.06	.06	.05	.06	.06	.05
	8	Winter	.18	.15	.12	.10	.09	.11	.10	.08
		Summer	.09	.08	.07	.06	.06	.07	.06	.06
	9	Winter	.14	.11	.09	.08	.07	.09	.08	.07
		Summer	.07	.06	.05	.05	.05	.05	.05	.04
	10	Winter	.14	.11	.09	.08	.07	.09	.08	.07
		Summer	.07	.06	.06	.05	.05	.06	.05	.05
	11	Winter	.10	.09	.08	.07	.06	.08	.07	.06
		Summer	.05	.05	.04	.04	.04	.04	.04	.04
	12	Winter	.10	.09	.08	.07	.06	.08	.07	.06
		Summer	.06	.05	.05	.04	.04	.05	.04	.04
Wood roof deck 3″ thick	7	Winter	.15	.12	.11	.09	.08	.10	.09	.08
		Summer	.07	.07	.06	.06	.05	.06	.05	.05
	8	Winter	.15	.12	.11	.09	.08	.10	.09	.08
		Summer	.08	.07	.06	.06	.05	.06	.06	.05
	9	Winter	.12	.10	.09	.08	.07	.08	.07	.06
		Summer	.06	.05	.05	.05	.04	.05	.05	.04
	10	Winter	.12	.10	.09	.08	.07	.08	.07	.06
		Summer	.06	.06	.05	.05	.05	.05	.05	.04
	11	Winter	.09	.08	.07	.06	.06	.07	.06	.06
		Summer	.05	.04	.04	.04	.04	.04	.04	.04
	12	Winter	.09	.08	.07	.06	.06	.07	.06	.06
		Summer	.05	.05	.04	.04	.04	.04	.04	.04

*Securitee and G system

A mechanical method of suspending Tongue and Groove Acoustical Tile



No more nails



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THERMAL INSULATION—13: U Factors

By Laurence Shuman, Consulting Engineer

U Factors for Flat Roofs

Legend:

Insulation on Roof Deck		Ceiling Finishes	
A None	E 2″ insulation board	7 1 sheet aluminum under air space at least 7½″, no ceiling	10 Aluminum foil back-up on lath and 1 sheet foil, two air spaces, plastered
B ½″ insulation board	F 1″ corkboard	8 Aluminum foil back-up on lath, plaster ceiling	11 3 sheets aluminum foil, three air spaces, no ceiling
C 1″ insulation board	G 1½″ corkboard	9 2 sheets aluminum foil, two air spaces, no ceiling	12 Aluminum foil back-up on lath, 2 sheets foil, three air spaces, plastered
D 1½″ insulation board	H 2″ corkboard		

ROOFING
INSULATION
CEILING

Roof Deck	Ceiling Finish	Season	Insulation on Roof Deck A	B	C	D	E	F	G	H
Gypsum fiber concrete roof deck 2½″ thick	7	Winter	.20	.15	.12	.10	.09	.12	.10	.08
		Summer	.08	.07	.07	.06	.06	.06	.06	.05
	8	Winter	.20	.15	.12	.10	.09	.12	.10	.08
		Summer	.09	.08	.07	.06	.06	.07	.06	.06
GYPSUM / GYPSUM B'D	9	Winter	.14	.12	.10	.09	.08	.10	.08	.07
		Summer	.06	.06	.05	.05	.05	.05	.05	.04
	10	Winter	.14	.12	.10	.09	.08	.09	.08	.07
		Summer	.07	.06	.06	.05	.05	.06	.05	.05
GYPSUM / GYPSUM B'D	11	Winter	.11	.10	.08	.07	.06	.08	.07	.06
		Summer	.05	.05	.04	.04	.04	.04	.04	.04
	12	Winter	.11	.10	.08	.07	.06	.08	.07	.06
		Summer	.06	.05	.05	.04	.04	.05	.04	.04

Roof Deck	Ceiling Finish	Season	Insulation on Roof Deck A	B	C	D	E	F	G	H
Gypsum fiber concrete roof deck 3½″ thick	7	Winter	.17	.14	.11	.10	.08	.11	.09	.08
		Summer	.08	.07	.06	.06	.05	.06	.06	.05
	8	Winter	.17	.14	.11	.10	.08	.11	.09	.08
		Summer	.09	.08	.07	.06	.06	.07	.06	.05
GYPSUM / GYPSUM B'D	9	Winter	.13	.11	.08	.08	.07	.09	.08	.07
		Summer	.06	.06	.05	.05	.04	.05	.05	.04
	10	Winter	.13	.11	.08	.08	.07	.09	.08	.07
		Summer	.07	.06	.06	.05	.05	.06	.05	.05
GYPSUM / GYPSUM B'D	11	Winter	.10	.09	.08	.07	.06	.07	.07	.06
		Summer	.05	.05	.04	.04	.04	.04	.04	.04
	12	Winter	.10	.09	.08	.07	.06	.07	.07	.06
		Summer	.05	.05	.05	.04	.04	.04	.04	.04

U Factors for Pitched Roofs

Legend:

Insulation or Ceiling on Underside of Joists			
A Roof only, underside of joists open	H 1″ rigid insulation board	N 3⅝″ flexible insulation, and gypsum board, lath and plaster	R 1 sheet reflective aluminum plus aluminum foil back-up on lath and plaster, 2 air spaces
B Metal lath and plaster	I 1″ rigid insulation board, plastered	O 1 sheet reflective aluminum, 1 air space	S 3 sheets reflective aluminum, 3 air spaces
C ⅜″ gypsum board	J 1″ flexible insulation	P Aluminum foil back-up on lath, and plaster	T 2 sheets reflective aluminum plus aluminum foil back-up on lath and plaster, 3 air spaces
D Wood or gypsum lath and plaster	K 2″ flexible insulation	Q 2 sheets reflective aluminum, 2 air spaces	
E ⅜″ plywood	L 2″ flexible insulation, and gypsum board, lath and plaster		
F ½″ rigid insulation board	M 3⅝″ flexible insulation		
G ½″ rigid insulation board, plastered			

Type of Roofing	Season	Insulation or Ceiling on Underside of Joists A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Slate or tile on wood sheathing	Winter	.56	.34	.34	.32	.31	.23	.23	.17	.17	.17	.10	.09	.06	.06	.22	.23	.14	.15	.10	.11
	Summer	.52	.34	.33	.32	.31	.23	.23	.17	.17	.17	.10	.10	.06	.06	.15	.18	.10	.11	.07	.07
Asphalt shingles or roll roofing on wood sheathing	Winter	.53	.33	.33	.31	.30	.23	.22	.17	.16	.16	.10	.09	.06	.06	.21	.23	.14	.15	.10	.11
	Summer	.49	.33	.32	.31	.30	.23	.22	.17	.17	.17	.10	.10	.06	.06	.15	.18	.10	.11	.07	.07
Wood shingles on wood strips	Winter	.49	.31	.31	.30	.29	.22	.21	.17	.16	.16	.09	.09	.06	.06	.21	.22	.14	.14	.10	.11
	Summer	.46	.31	.31	.29	.29	.22	.21	.17	.16	.16	.10	.09	.06	.06	.15	.17	.09	.10	.07	.07

Why REZNOR sells 1 out of every 2 Gas Unit Heaters

Reznor leads in QUALITY

Reznor offers the best PRICE

Reznor is first in KNOW-HOW

Reznor is tops in AVAILABILITY

One out of every 2! Such complete domination of a market shared by more than 100 producers can't be an accident. Reznor achieved this leadership by building a better unit heater. An alert, aggressive product development program keeps Reznor ahead of the field. And the highest standards of craftsmanship and materials insure to every Reznor user the full advantages of Reznor's "years-ahead" engineering.

The best heater at the lowest price? No, it isn't possible. Prices on Reznor heaters are comparable to those of the best competitive units . . . higher than those of some inferior units. But the economies of mass production enable Reznor to build a better heater for the price. Wise buyers take advantage of this to get more heater value, dollar for dollar, from Reznor than any other manufacturer can afford to offer.

Gas unit heaters are a specialty, not just a side line, with Reznor. Every emphasis is given to the development of more efficient gas-fired space heaters for business and industry. This determination to do one thing well means that every possible improvement will be fully explored and exploited—never sidetracked for other projects or products.

And because Reznor sells more, many more, gas unit heaters than any other manufacturer, Reznor knows more about gas unit heating. If your Reznor representative or distributor doesn't have the answer you need, he can get it. Somebody somewhere in the Reznor organization will have the solution—proved by experience.

Reznor has distributors in more than 300 cities. Most of them maintain complete warehouse stocks. Wherever your job is located, you can specify "Reznor" with complete assurance that the equipment you call for will be available where and when it's needed.

Wherever you are, if it's information you need, your Reznor distributor is as close as your telephone—for the price of a local call. If you don't find a Reznor listing under "Heaters-Unit" in the classified pages of your telephone directory, please let us know. We'll give you the name and address of your nearest representative and distributor.

There is no "equivalent" for Reznor Gas Unit Heaters!

REZNOR
THE WORLD'S LARGEST-SELLING GAS UNIT HEATERS
REZNOR MANUFACTURING COMPANY
62 Union St., Mercer, Pa.

NORTH AMERICAN BUILDING STONES — 18

Presented through the cooperation of the International Cut Stone Contractors' and Quarrymen's Association

INDEX OF BUILDING STONES — (Conclusion)

80 OATMEAL
Company Name: Palos Verdes Stone Dept., Great Lakes Carbon Corp.
Quarry Location: Rolling Hills, Calif. (Mail address: 612 Flower St., Los Angeles, Calif.)
Geological Designation: Silicified limestone and chert
Texture: Medium coarse
Color: Buff
Furnished As: Ledgestone. Heights — 4″–12″. Lengths — 6″–24″
Surface Coverage: 30–50 sq ft per ton

81 ORNAMENTAL
Company Name: Palos Verdes Stone Dept., Great Lakes Carbon Corp.
Quarry Location: Rolling Hills, Calif. (Mail address: 612 Flower St., Los Angeles, Calif.)
Geological Designation: Silicified limestone and chert
Texture: Coarse
Color: Variegated gray
Furnished As: Dimensional

82 PLASTER ROCK
Company Name: Palos Verdes Stone Dept., Great Lakes Carbon Corp.
Quarry Location: Rolling Hills, Calif. (Mail address: 612 Flower St., Los Angeles, Calif.)
Geological Designation: Silicified limestone and chert
Texture: Coarse
Color: Variegated off-white

83 PLUM VALLEY STONE
Company Name: The Babcock Co.
Quarry Location: Kasota, Minn.
Geological Designation: Dolomitic limestone
Texture: Uniform
Color: Pinkish tan
Physical Tests: Tests not completed
Furnished As: Ledgestone. Heights — 2″–6″. Lengths —1′–3′6″
Surface Coverage: 45 sq ft per ton

84 SPECIMEN
Company Name: Palos Verdes Stone Dept., Great Lakes Carbon Corp.
Quarry Location: Rolling Hills, Calif. (Mail address: 612 Flower St., Los Angeles, Calif.)
Geological Designation: Silicified limestone and chert
Texture: Rough and eroded
Color: Gray and buff
Furnished As: Dimensional

85 TENNESSEE MARBLE
Company Name: Tennessee Marble Co.
Quarry Location: Knoxville 10, Tenn.
Geological Designation: Marble
Texture: Fine-grained
Color: Pink, gray, cedar
Chemical Composition: Calcium carbonate — 99.46%
Physical Tests: Absorption — 0.06%
Strength: Crushing strength — 14,000–18,000 psi
Furnished As: Dimensional, Splitface. Dimensional: Average building sizes. Splitface: Heights — ⅜″–7″, ¾″ rise. Lengths — 1′–5′
Surface Coverage: Splitface. Average 40 sq ft per ton. Dimensional — 170 pcf
Furnished As: Splitface. Heights — 1″–3″. Lengths — 12″ –36″
Surface Coverage: 30–50 sq ft per ton

86 WATERWASH
Company Name: Palos Verdes Stone Dept., Great Lakes Carbon Corp.
Quarry Location: Rolling Hills, Calif. (Mail address: 612 Flower St., Los Angeles, Calif.)
Geological Designation: Silicified limestone and chert
Texture: Smooth
Color: Weathered off-white
Furnished As: Dimensional. Heights — 4″–8″. Lengths — 6″–18″
Surface Coverage: 30–50 sq ft per ton

87 LAURELSTONE
Company Name: Laurelstone Corporation
Quarry Location: Waldron, Ind. (Mail address: P.O. Box 121, Shelbyville, Ind.)
Geological Designation: Dolomitic limestone
Texture: Very dense
Color: Soft pastel shades of buff, brown and gray permanently intermingled by nature with the rich texture of the ledge face
Furnished As: Natural bed face ledgestone. Heights — 2¼″, 5″, 7¾″. Lengths — 16″–4′
Strength: Compressive strength — over 20,000 psi
Other Facts: Special width stones for sills, steps and cop ngs sawed either 2, 4 or 6 sides on request

CORRECTIONS

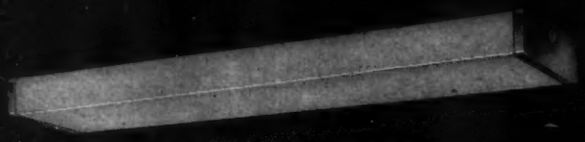
13 COLORADO ROSE STONE
Quarry Location: Add "(Mail address: P.O. Box 947, Lyons, Col.)"

44 NEW PARK MINING STONE
Company Name: Change from "New Park Mining Co." to "Mountain Park Quarries, Inc."

45 ONEONTA STONE
Furnished As: Change from "Heights — 1″–8″. Lengths — 6″ up" to "Heights — 1″–8″. Lengths — 1′–4″"

46 PEARL SANDSTONE
Surface Coverage: Change from "50 sq ft per ton" to "50 sq ft per ton ashlar veneer"

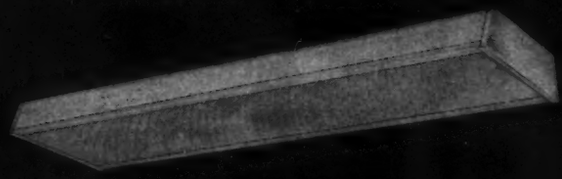
The SUBURBAN
. . . with Extruded Plastic Diffuser



S240	2 lamp 48" Rapid Start
S220	2 lamp 24" Trigger Start
S420	4 lamp 24" Trigger Start
S440	4 lamp 48" Rapid Start

TYPICAL PERFORMANCE CURVE

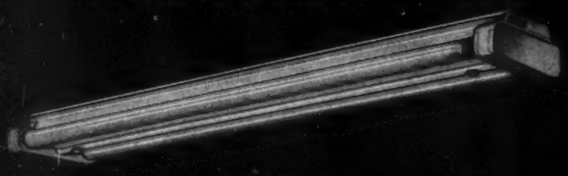
The MERCHANT
. . . with Lucite® Diamond Lens



M242	2 lamp 48" Rapid Start
M442	4 lamp 48" Rapid Start

TYPICAL PERFORMANCE CURVE

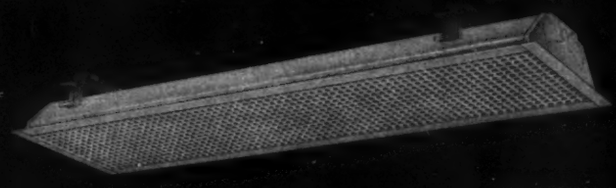
The SUPERMARKETER
. . . for high levels of illumination



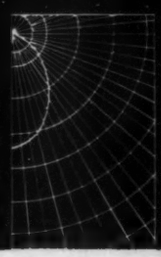
72B4	2 lamp 48" Rapid Start
72B8	2 lamp 96" Rapid Start
74B4	4 lamp 48" Rapid Start
74B8	4 lamp 96" Rapid Start

TYPICAL PERFORMANCE CURVE

The Packaged TROFFER
. . . with Plastic Louver



T240	2 lamp 48" Rapid Start



TYPICAL PERFORMANCE CURVE

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Here is a completely new concept in modern lighting—four basic fixture types with tremendous flexibility and unusually broad application. Slim and handsome in appearance, they provide new highs in lighting efficiency and meet the most exacting requirements for modern layout planning and ease of installation.

Styled by one of America's leading architect-designers, the SUBURBAN and the MERCHANT are strikingly handsome fixtures, extremely shallow with smooth, trim, modern lines. The Packaged TROFFER, only 4½" in depth (fits any 5" recess) is complete with lay-in enclosure, integral side and snap-on end trim flanges, adjustable hanger brackets and Universal furring clips. The SUPERMARKETER is designed to provide high levels of illumination in modern merchandising areas.

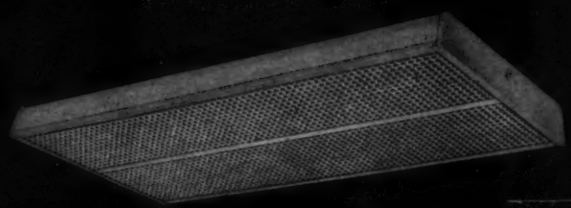
The Miller Merchandise Line goes hand-in-hand with today's increasing trend for lower ceilings. When flush mounted, The SUBURBAN, MERCHANT and SUPERMARKETER provide even ceiling illumination so necessary in minimizing glare and contrast. When stem-suspended, special top apertures produce additional upward light.

ADDITIONAL ADVANTAGES of the MILLER MERCHANDISE LINE

- Hot-sprayed baked enamel on Bonderized 20-gauge steel
- Newest plastics for continuing light stability; guaranteed free from discoloration, warpage for one year
- Bonderite, UL, AFL–IBEW Labels
- All fixtures wired with ETL Certified HPF ballasts . . . readily accessible for very easy maintenance

Ask your Miller representative for complete information about the new MILLER MERCHANDISE LINE

The MERCHANT
. . . with Plastic Louver



M440 4 lamp 48" Rapid Start

M240 2 lamp 48" Rapid Start

TYPICAL PERFORMANCE CURVE

The MERCHANT
. . . with Corrugated Plastic Enclosure

M100 2 lamp 48" Rapid Start

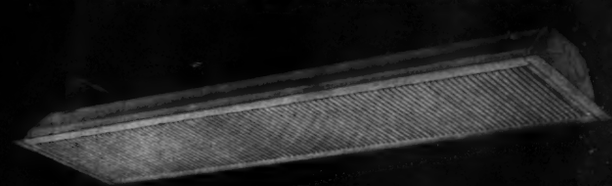
TYPICAL PERFORMANCE CURVE

The Packaged TROFFER
. . . with Lucite* Diamond Lens

T242 2 lamp 48" Rapid Start

TYPICAL PERFORMANCE CURVE

The Packaged TROFFER
. . . with Corrugated Plastic Enclosure



T244 2 lamp 48" Rapid Start

TYPICAL PERFORMANCE CURVE

*(R)DuPont Co.

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JUST 4 BASIC FIXTURE TYPES . . . all Rapid Start*, all Engineered for Quality Illumination and Peak Performance. . . for Modern Lighting in Stores, Schools, Offices and Public Buildings

*EXCEPT MODELS S220 & S420

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Company.....

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.....

A/E ROUNDUP

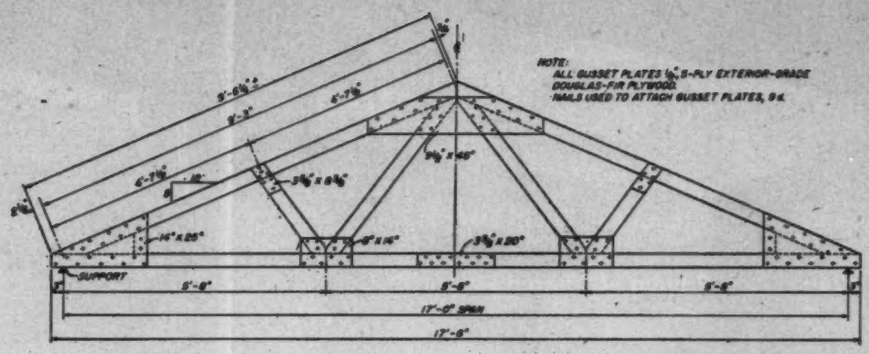
(Continued from page 248)

WOOD ROOF TRUSSES STAND UP UNDER LAB STRENGTH TESTS

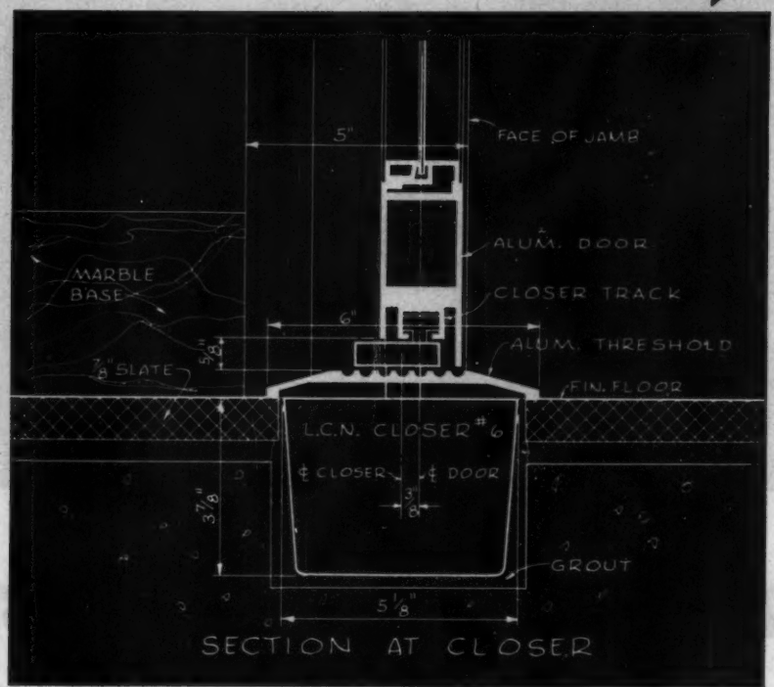
Wood roof trusses that are well built and of adequate design can make house roofs strong enough to withstand high winds, strength tests at the U. S. Forest Products Laboratory in Madison, Wis. have shown. The increasing use of roof trusses, which make possible open planning because the bearing partitions required with joist-and-rafter roof framing are eliminated, led the laboratory to test them for strength and stiffness.

The truss design used is shown at right. For comparison purposes both nailed and glued trusses were tested. All trusses were given increasing increments of load, as shown in the photo below, until they failed. They were also exposed to conditions intended to represent the first two years of service in a house under severe moisture conditions. Both nailed and glued trusses withstood several times the design load of 35 psf usually set for roofs in building codes, and over two times the design load without deflecting more than 1/360 of the span, the limit usually assumed to insure against plaster cracks.

The tests showed that the glued trusses were clearly stronger than the nailed trusses, taking maximum loads equivalent to around 200 psf as compared to about 170 psf for the nailed trusses. The severe shrinking and swelling forces exerted during the cyclic exposure on the glued joints had a definite weakening effect. However, the glued joints still remained much stronger than design requirements and deflected very little during the 120-day exposure. Glued trusses are advantageous for prefabricated construction because, being stiffer, they withstand handling, piling and transportation hazards without racking out of shape. Also, smaller gussets can be used than for nailed trusses. The strength and stiffness of nailed trusses can be improved by driving half the nails from one side of the truss and half from the other side at each joint.



(Continued on page 264)



CONSTRUCTION DETAILS

for LCN Floor Type Door Closer, Shown on Opposite Page

The LCN Series 2-4-6 Closer's Main Points:

1. Full rack-and-pinion, two-speed control of the door
2. Mechanism concealed; lever arm disappears under door
3. Door hung on regular butts, its weight carried independently of closer
4. Closer easily adjusted or serviced without taking door down
5. Installed with or without threshold; may be flush with threshold or with floor
6. Used with wood or metal doors and frames

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or See Sweet's 1955, Sec. 17e/L

LCN CLOSERS, INC., PRINCETON, ILLINOIS

Harrison & Abramovitz and Eldredge Snyder, *Architects*

MODERN DOOR CONTROL BY *LCN* · CLOSERS CONCEALED IN FLOOR

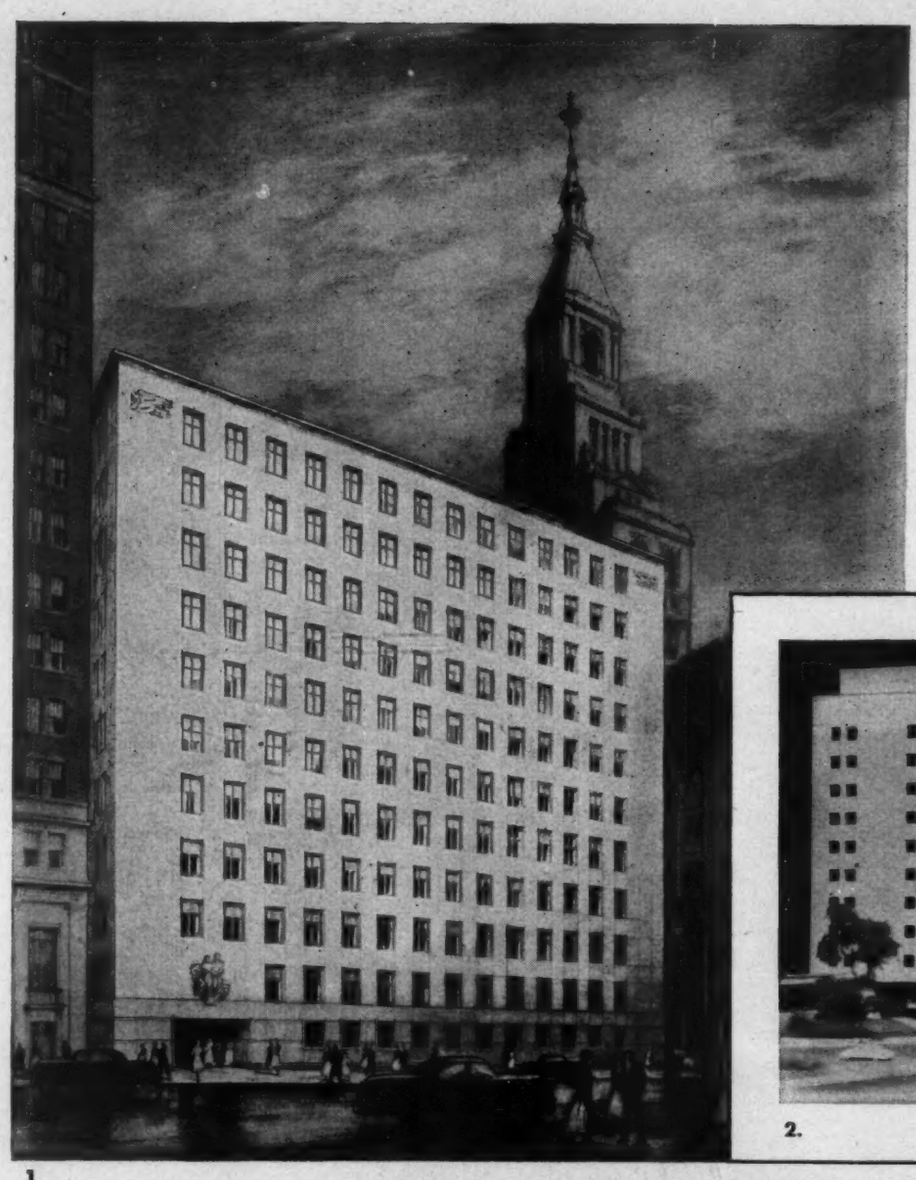
SOPHRONIA BROOKS HALL AUDITORIUM, OBERLIN COLLEGE, OBERLIN, OHIO

LCN CLOSERS, INC., PRINCETON, ILLINOIS

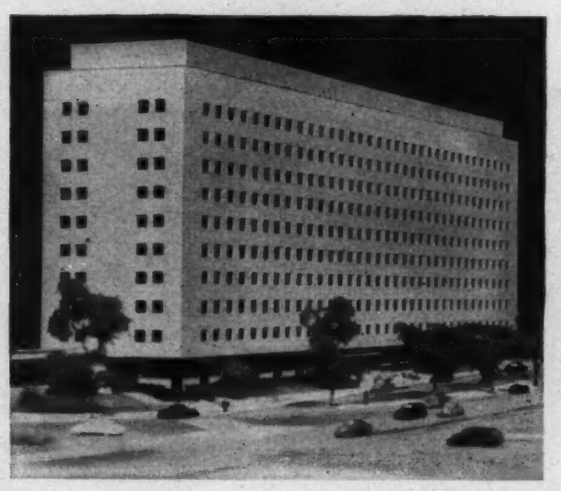
Construction Details on Opposite Page

ELECTRIFLOOR

. . . because this structural floor



1. The Travelers Insurance Co., Hartford, Connecticut
   Architect: Voorhees, Walker, Foley & Smith
   Contractor: George A. Fuller Co.
   Header Duct: National Electric Products Corp.
2. Dept. Property & Supplies Office Building General State Authority, Harrisburg, Pennsylvania
   Architect: Lacy, Atherton & Davis
   Contractor: Ritter Bros.
   Header Duct: Walker Brothers of Conshohocken
3. State Office Building, Pittsburgh, Pennsylvania
   Architect: Altenhof & Bown
   Structural Engineer: George Levinson
   Electrical Engineer: Carl Long
   Contractor: Navarro Corp.
   Header Duct: National Electric Products Corp.
4. Central Office Building, Dept. of Employment Sacramento, California
   Architect: California State Dept. of Public Works, Division of Architecture
   Contractor: George A. Fuller Co.
   Header Duct: National Electric Products Corp.
5. General Telephone Co., Santa Monica, California
   Architect: Albert C. Martin & Assoc.
   Contractor: George A. Fuller Co.
   Header Duct: National Electric Products Corp.
6. General Mitchell Field Airport Terminal Milwaukee, Wisconsin
   Architect: Milwaukee County Architects' Office
   Contractor: Milwaukee County Construction Dept.
   Header Duct: National Electric Products Corp.



2.

1.

4.

5.

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Investigate Electrifloor now for your next building. To utilize all its advantages, you should design the building around it. Fenestra's nationwide sales organization is ready to assist you. Write Detroit Steel Products Co., Dept. AR-10, 2252 E. Grand Blvd., Detroit 11, Mich.

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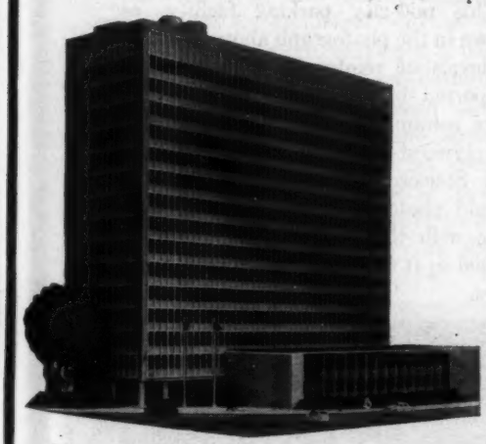

3.

Exclusive Features of ELECTRIFLOOR

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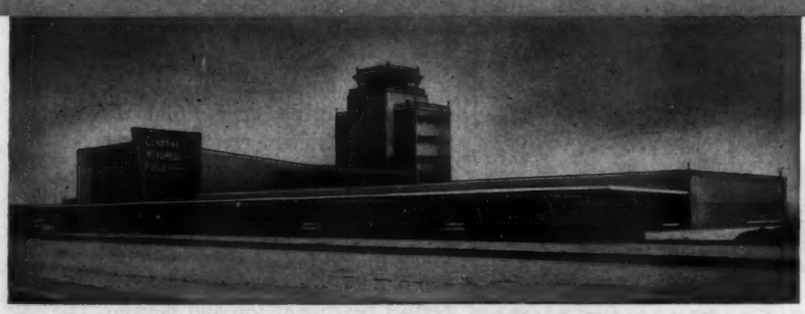
- Capacity of cells is 2½ to 3 times greater than most other cellular floors, protecting against dangerous crowding of wires.
- Flat, smooth surface saves concrete fill and provides utmost economy in preparation for the finished floor.
- Any depth Electrifloor panel can be designed as a lateral diaphragm for resistance to wind, bomb shock and seismic loads.
- Greater strength with lighter dead weight gives unusual structural design economy.



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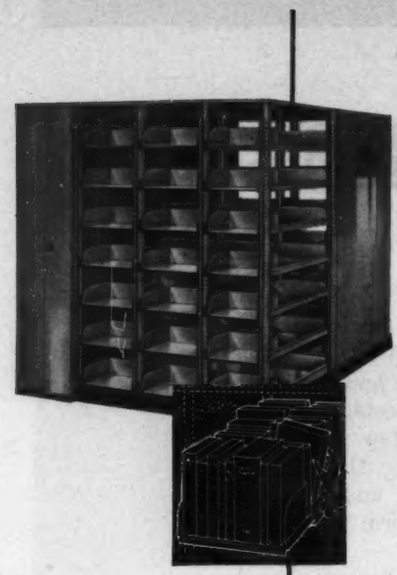

It's a familiar request to architects on library projects: "give us more book space but make the area more open and modern." Yet it's a problem easily solved with remarkable Hamilton Compo stacks. Compo stores books on sliding drawer-type shelves to provide for twice as many books in the same space taken up by ordinary stacks.

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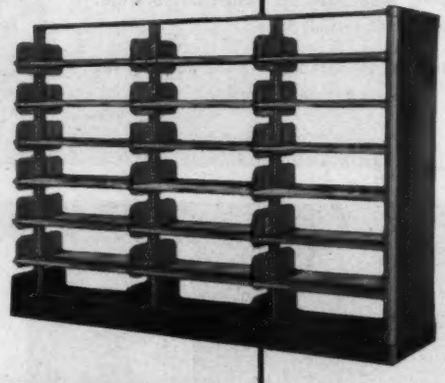

If there's a budget problem, Hamilton also offers conventional stacks — Continuous Upright and Hamilton-Standard. They're handsomely designed, equipped with adjustable shelves, built for years of efficient service by the world's foremost specialists in professional equipment — Hamilton.

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AE ROUNDUP

(Continued from page 260)

FOUR-LEVEL RAMP "CARPORT" PARKS OKLAHOMA CITY CARS

Oklahoma City, Okla., has provided off-street parking for 675 cars in a large, open-deck concrete garage designed by Bailey, Bozalis and Associates. The "Carport," which was built for about $600,000 (about $800 per parking space), encompasses 180,000 sq ft of usable space and 8000 sq ft of ground space on the ground floor.

This mid-city parking facility, as shown in the photograph above, consists of levels of reinforced concrete slabs supported by precast, reinforced concrete columns. The slabs were poured on plywood bases on which had been laid Steelcrete reinforcing mesh (see second photo). Labor saving was possible with the laying of the mesh on 45,000 sq ft of deck by eight men in six days.

The columns consist of 6½-in. diameter steel pipe core finished with precast lightweight concrete. Each column, with two triangular pieces of Steelcrete welded near the top on each quadrant for shear reinforcement, was prepared with a 7½-in. diameter base cap-plate welded and machined to give perfect bearing at top and bottom. The

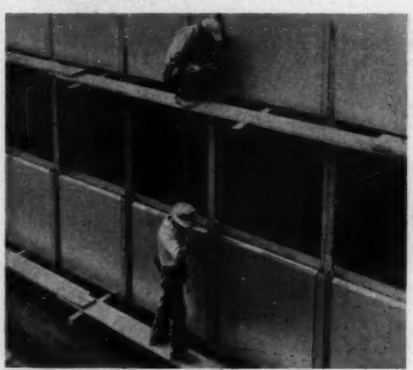
second photograph shows pintles in place in the tops of the columns ready to receive the next story of columns with pintle holes in the bottom plates.

Banked, circular ramps of concrete reinforced with Steelcrete provide escalation for the cars. Straight ramps cantilever up or down from the smaller decks to each of the overlapping larger decks.

LOW-COST COLLEGE DORMS CLAD IN ALUMINUM PANELS

The latest addition to the Carnegie Tech campus, Donner Hall Dormitory for men, has been constructed on a limited building budget using curtain walls of preformed aluminum sheet panels and aluminum mullions.

The complete wall unit, designed and detailed by architects Mitchell & Ritchey of Pittsburgh, employed a few simple shapes which are self-flashing and assure adequate expansion and contraction. The faces of the sheet panels are flat and require no reinforcing ribs. Formed edges serve as a rigid frame. Controlled fabricating techniques avoided "pillowing" at the welded corners.



Two men enclosed the four-story building in three weeks. Panels and mullions were fastened to wood framing. Each panel has a chemically etched, frost-white surface, which contrasts with the Alumilite finish of the mullions, cover caps and window walls.

(Continued on page 269)

However challenging the demands of your next laboratory project might be, Hamilton has anticipated them — with the most complete and flexible equipment ever built. New All-Science tables in six handsome finishes for modern against-the-wall, open-center floor plans. Popular All-Purpose equipment for varying classroom needs. Equipment custom-built for institutions and industry, and "packaged" laboratories, too.

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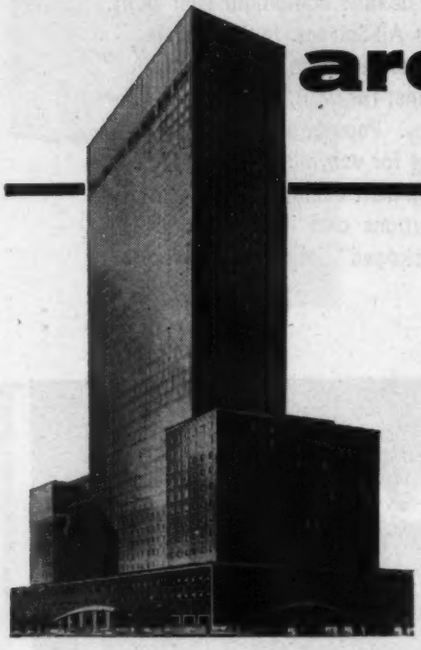
A SHINING EXAMPLE of a new architectural frontier



The pioneering spirit of American architecture is reflected in the shining stainless steel splendor of the Socony Mobil Building. Over 7,000 panels, 3,200 of which include stainless steel-framed windows, provide a permanently weatherproof, inherently fire-resistant surface. Harrison and Abramovitz, architects; John B. Peterkin, associate. Turner Construction Company, general contractor. Edwards and Hjorth, structural engineers. Jaros Baum and Bolles, mechanical engineers. Edward A. Ashley, electrical engineer.

It's the new Socony Mobil Building now being erected in New York City. When completed, it will be the world's largest metal-clad office building . . . a full forty-two stories of gleaming stainless steel walls and stainless steel windows.

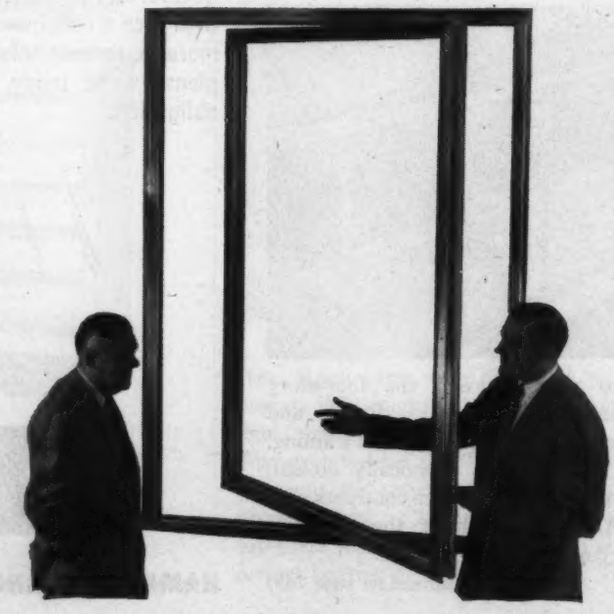
Over the years, stainless steel has been the ideal complement to other building materials. It harmonizes beautifully with glass, brick, stone and all other materials of construction. In addition, stainless offers unique advantages of its own.

For example, the beauty of stainless steel is enduring. It stubbornly resists rust and corrosion . . . requires minimum maintenance in architectural applications. That's important for hard-to-service areas such as roof drainage items, flashing, parapet caps, domes, gravel stops and ornamental trim.

Stainless is invaluable in applications where strength is required but bulk is forbidden. Its high strength-to-weight ratio along with high corrosion-resistance permit you to use thinner, lighter sections in complete safety. That's one reason for the Socony Mobil walls. It's a primary consideration in such applications as curtain wall construction, marquees and sunshades, pier covers and spandrels, entrances and lobbies.

With stainless, there's no need for weekly "polish up the brightwork" expense. It stays bright and attractive for life. And, whether you specify it for beauty, strength, long life or low maintenance, you automatically get all its other "bonus" advantages. Stainless sparks design ideas. Republic will help you develop them in ENDURO Stainless Steel. The coupon will bring you design data.

New Truscon stainless steel reversible windows will provide important savings to the owners of the Socony Mobil Building. By rotating a full 360°, windows can be cleaned entirely from the inside . . . in half the time, at half the cost. Either side has excellent weathering properties. In addition, this window has been proved 80 times more resistant to air leakage than allowable industry standards . . . resulting in appreciable fuel and air conditioning savings.



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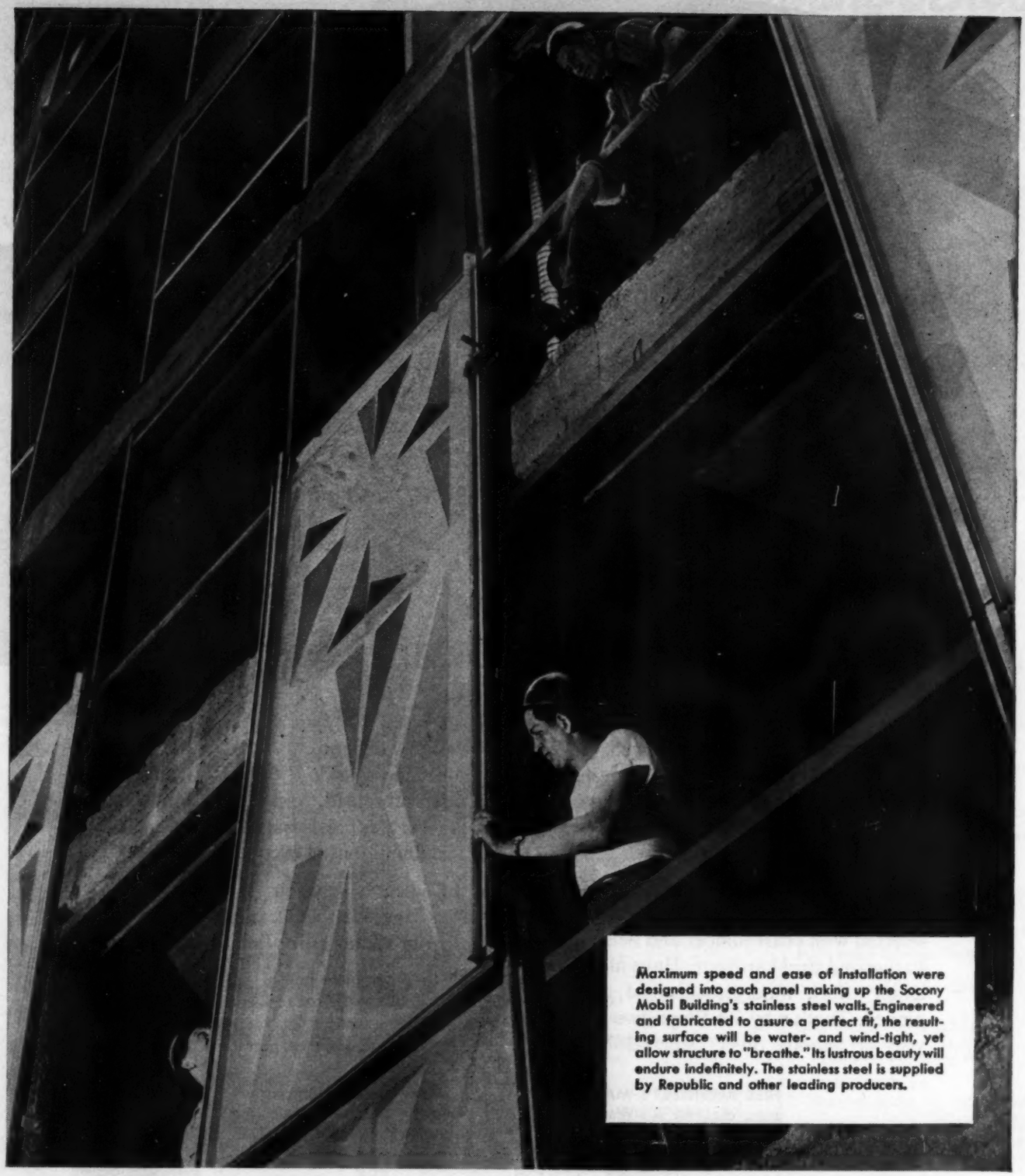

Maximum speed and ease of installation were designed into each panel making up the Socony Mobil Building's stainless steel walls. Engineered and fabricated to assure a perfect fit, the resulting surface will be water- and wind-tight, yet allow structure to "breathe." Its lustrous beauty will endure indefinitely. The stainless steel is supplied by Republic and other leading producers.

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Many doors usually mean heavy traffic. Repeated daily wear and tear. But Ro-Way doors stand up. They're precision-made from selected west coast lumber and heavy-gauge, Parkerized steel hardware. Have mortise and tenon joints, water-proof glued *and* steel-pinned. That's why Ro-Ways give year after year of smooth, quiet, dependable service.

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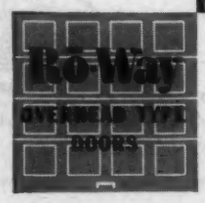

there's a Ro-Way for every Doorway!

AE ROUNDUP

(Continued from page 265)

FULL-SCALE MOCK-UP TESTS NEW CONNECTICUT OFFICE

A full-scale replica of a section of the new $10 million home office of the Connecticut General Life Insurance Co. of Hartford has been constructed in Bloomfield, Conn., to pretest materials and methods which will be employed in the final structure. The mock-up measures 60 by 72 ft and represents a typical section of the main clerical area on the second floor.

Company officials and architects (Skidmore, Owings and Merrill) are able to examine, in full size, details of the lighting, ceiling, partitioning and screening systems, and their relation to furniture, floor finishes and color. They also can test in the field the assembly of full-size exterior walls and can plan in advance the coordination of interior structural and service elements, such as beams, ducts and lighting fixtures.

As a result of the testing, a decision was made to use 8- by 11-ft, heat-absorbent, green-tinted glass panels instead of 6- by 8-ft panels. Shown in the mock-up the day the Connecticut chapter of the AIA visited the site, they are said to be the largest tinted windows to be used in construction to date.

Scheduled for completion in October 1956, the new building will have 500,000 sq ft of office space. Adjoining the main three-story office areas will be a one-story, 800-seat dining area overlooking a reflecting pool and a four-story wing which will house the public lobby and some special departments.

Longest Door Frontage ever installed at New York International Airport was erected last month for the Port of New York Authority in the new Eastern Air Lines hangar #9. Four of the 12 motor-operated sliding doors manufactured by International Steel Co. measure 79½ ft long, and the remaining eight measure 75½ ft. Total width of the 32-ft-high doors will be 922 ft.

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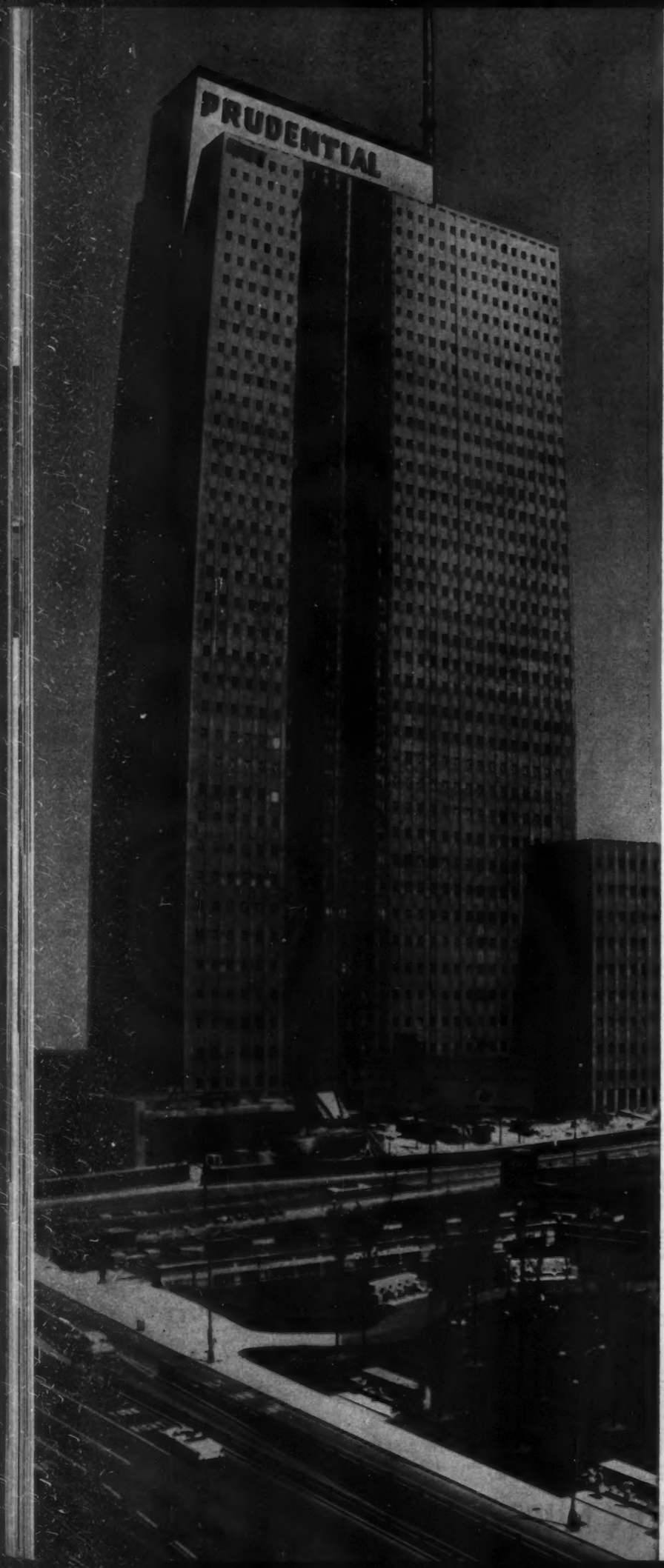

Special panoramic photograph of the Prudential Building, Chicago, made during late stages of construction. Courtesy Chicago Tribune.

Classic

To sound the praises of everyone concerned with bringing this modern structure into being would merely be a repetition of the obvious . . . The same is true of Day-Brite—the classic line of light.

It is enough to say that Day-Brite troffers are already installed—in lobbies, corridors, general and private offices, escalator and stair wells. Occupants are in, enjoying a high degree of visual comfort.

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Example of Day-Brite Lighting

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MILES OF FILES contain names and records of thousands of policy-holders. Day-Brite troffers in ceilings supply abundant comfortable light; making seeing tasks easier.

A CLEAR PATH OF SAFETY for escalator and stair passengers is provided by these Day-Brite troffers, mounted at right angles to the line of passenger travel.

HIGH ILLUMINATION LEVELS on desk tops and adjacent work areas are uniformly distributed throughout these huge general offices.

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In confirmation of the above, there are over 500 Wing Draft Inducer installations in schools alone, in all parts of the country, with hundreds more being specified by architects and engineers as the great school building program continues.

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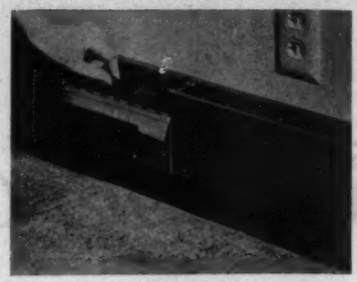
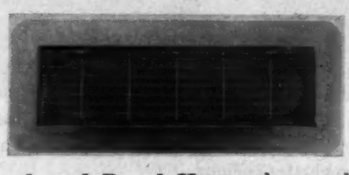
AE PRODUCTS

(Continued from page 249)



Westinghouse Electric Baseboard provides heat by radiation and convection, with air passing over the heating elements and flowing out through apertures in the baseboard and also being radiated from the baseboard surface. The manufacturer claims that the temperature of the surface reaches approximately 100 F. A control unit built into the baseboard regulates the temperature of each room. The heaters are available in 2-ft sections, 7 in. high and 2⅝ in. deep. They require 240 volts and are rated at 250 watts per foot. *Westinghouse Electric Corp., P. O. Box 2099, Pittsburgh 30, Pa.*



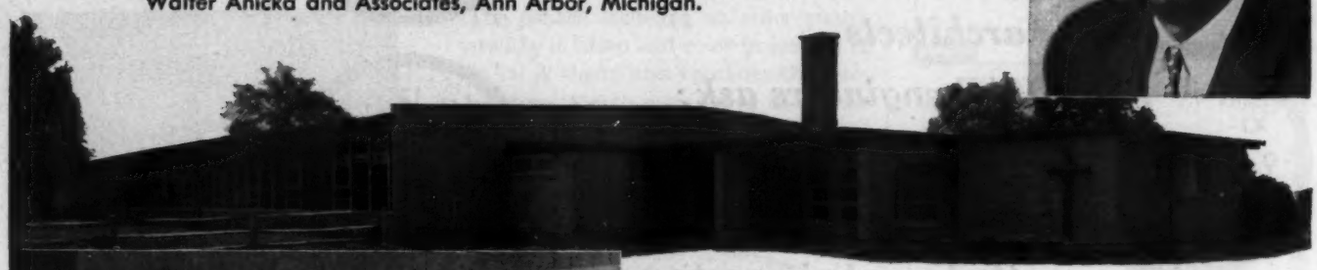
Baseboard Panel Heater has a thin aluminum heating element fused to a tempered glass plate to emit infra-red heat rays. Recessed and surface models, as well as bathroom models, are also available. The panels have individual thermostats and don't harm objects or persons near them, since the glass surface never gets too hot. *Can Arm Corp., P. O. Box 30, Chazy, N. Y.*

Heat Pumps for cooling and heating are being manufactured in home and commercial package units from 2 to 15 hp and in custom-built jobs up to 100 tons. The McMillan heat pump operates on the water-to-air principle, using either city or well water, and is specially equipped so that discharge water can be used for lawn sprinkling. The package units will be complete with prefabricated ducts, insulation materials and outlets. The manufacturer claims that 1 ton of air cooling can be obtained for 1 kw of electric energy and that heating can be done at half the cost of the cheapest fuel available in Florida. *W. W. McMillan and Co., P.O. Box 5064, Jacksonville 7, Fla.*

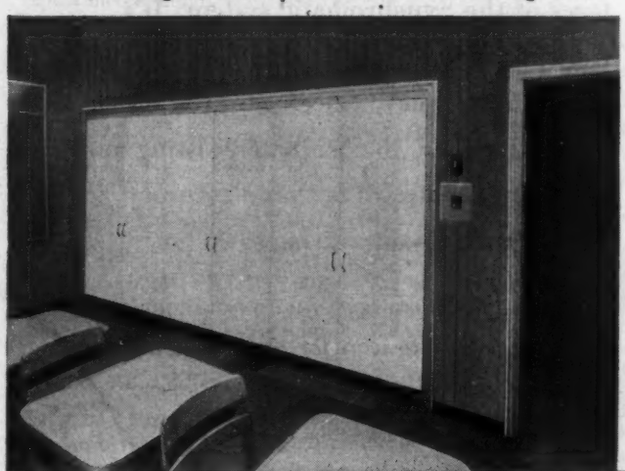
(Continued on page 275)

Walter Anicka is known for his economy as well as quality in school design.

St. Joseph's School, Howell, Michigan, designed by Walter Anicka and Associates, Ann Arbor, Michigan.



EMCO Model 400 Wardrobes at the St. Joseph School, Howell, Michigan, save space with their receding doors.



Notice the under-door ventilation space. There are no obstructions to trip a child. Handsome door panels add to beauty of architect's functional interior.

Another Anicka School *features* SINCE EMCO 1932 WARDROBES

Walter T. Anicka & Associates not only specify but insist on EMCO Wardrobes for their schools. Like other leading architects, they have found good reasons for preferring EMCO Wardrobes.

They know, for example, that EMCO Wardrobes give a school more service for the money. They are ideally designed for classroom use, providing safety and ventilation features that are unsurpassed. Furthermore, the quality of EMCO hardware is unequalled by any other wardrobe on the market.

Add to these advantages the fact that EMCO Wardrobes offer factory service and adjustment to make certain they are functioning perfectly and installed properly—and you see why EMCO Wardrobes are the least expensive in the long run.

For nearly a quarter of a century, EMCO wardrobes have been proving their quality and long-run economy. If you want the best in your schools, specify EMCO classroom wardrobes.

Other Anicka schools equipped, or about to be equipped, with EMCO Wardrobes are these:

Hand School Addition
Detroit, Michigan

Commerce School Addition
Walled Lake, Michigan

Saline Elementary School
Saline, Michigan

Glengary School Addition
Walled Lake, Michigan

Pinckney Elementary School Addition
Pinckney, Michigan

WRITE FOR FREE BROCHURE. MAIL COUPON. Describes complete line of EMCO Wardrobes and lists the name of nearest representative. No obligation.

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Please send me your free brochure about EMCO Wardrobes.

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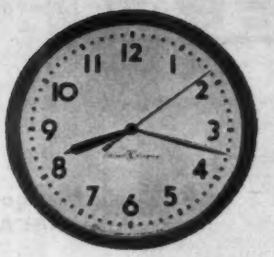
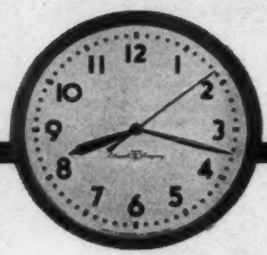




architects and engineers ask: "can I have a clock system that resets immediately after power failure?"

When power fails, then returns, you want correction to start immediately.

The Edwards Synchromatic clock system starts resetting the instant power returns. Here's how it works:

Every Edwards clock is equipped with two Telechron® motors. One powers the clock normally. The other is used for resetting. When power returns after a failure, the reset motor automatically* *and immediately* takes over and advances the clocks at 10 times normal speed. No waiting for the next hour—in many cases 2 or 3 hours—to get the right time again.

Instant resetting is just one of the advantages of the Synchromatic system. It's the only type of system that uses the high speed (3600 rpm), Telechron® rotor in every clock . . . to eliminate coasting and scattering, assure unbeatable accuracy in every clock—at all times!

**Even in the Edwards manual reset models you do not have to wait for the next hour but can reset immediately on return of power, with one simple operation.*

For more information about Edwards Clock and Program System, write Dept. AR-10.

Synchromatic Clock Systems

EDWARDS *Company, Inc., Norwalk, Conn.*
In Canada, Owen Sound, Ontario

Specify Edwards and Be Sure

America's schools run more smoothly . . . America's school children are better protected thanks to Edwards.

Edwards clock and program systems provide an accurate, simple and flexible means of programming activities of large groups in schools, institutions, offices and industrial plants. A program instrument is used having as many circuits as there are different programs. Standard sizes contain 1, 2, 4, or 6 circuits. Signals may be sounded any minute, 24 hours a day, 7 days a week. With a signal control panel it is possible to change program or signal schedule in any room or location to another program without disturbing the overall program setting or wiring. The Edwards program instrument is powered by the same heavy duty Telechron motored movement used in the clock systems.

TRIM, MODERN, EFFICIENT:

Edwards Fire Alarm Systems are chosen by leading architects to protect America's schools, hospitals and important buildings. Write for Bulletin on Fire Alarm Systems.

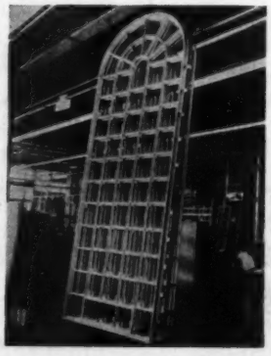
EDWARDS
protects . . everywhere!

AIE PRODUCTS

(*Continued from page 272*)

Berko Electric Baseboard provides radiant heat from heat-resistant glass panels which have an electrically conductive coating with silver terminating edges. The panels, including an outer guard, are 2½ in. deep and come in lengths of 36 in. A thermostat regulates the temperature in each room, as in the Berko line of wall panels. *Berko Electric Mfg. Corp., 212-40 Jamaica Ave., Queens Village, N. Y.*

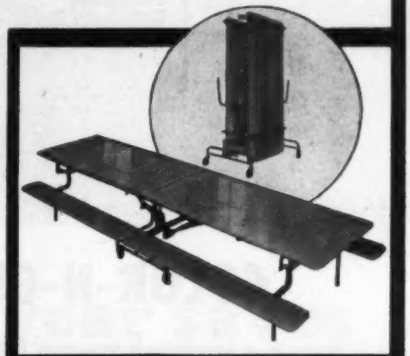
Music in Every Room is possible with the *Registered Music System*. A specially designed steel case that houses a volume control and a 6- by 9-in. kinetically balanced speaker is connected by wire to a television set, radio or record player and attached to the plenum chamber of any warm air furnace or central air conditioning system. The sound emanating from the speaker is carried through the house by the heating or cooling ducts. *The Kodiak Corp., 3515 Prospect Ave., Cleveland 15, Ohio.*



Specialty Windows, for all types of unusual installations, are produced by the Vampco Specialty Dept. Typical of the jobs turned out are the giant stained-glass windows shown above. Designed by Corning & Moore, Architects, the 67-panel windows will be installed in the Sherwood Presbyterian Church in Washington, D. C. *Valley Metal Products Co., Plainwell, Mich.*

(*Continued on page 276*)

FREE *catalog describes the* SICO *System for lower costs, multi-use of space and convenience*



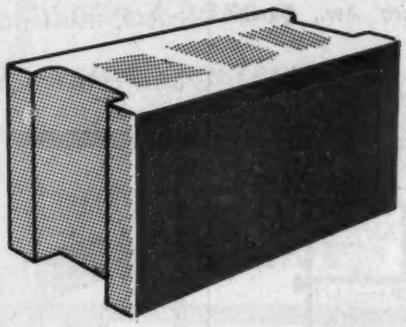
SICO B-Y Table

typical of the quick folding, easy rolling units that instrument the SICO System of school, industrial and institutional seating. Cost less because they require no installation and seat greater numbers in less space. SICO Tables make multi-use of space practical and economical without any built-in construction. They permit any area to be converted from one function to another in a matter of minutes. Fast, safe operation because there are no latches, locks or catches. All units require small storage area—B-Y needs just 8¾ Sq. Ft. All have tough, sanitary, mellamine plastic tops mounted on 14 gauge, structural steel frames that are zinc lustron plated for lasting protection. All are equipped with 4 in. rubber casters. B-Y seats 16 adults or 20 children.

FREE CATALOG—fully describes the SICO System for greater economy and presents complete table specifications. (Listed Sweets: 22i/SE).

SICO
manufacturing company
6045 Pillsbury Ave. So., Minneapolis 19, Minn.
Dept. 404

NOW YOU CAN SPECIFY CONCRETE BLOCK IN 8 BEAUTIFUL PERMANENTLY GLAZED COLORS



COLOR-N-GLAZE BLOCK

Here in a single unit you can provide your clients with all the well-known advantages of standard concrete block, plus the obvious economies resulting from elimination of painting or other decorative covering, faster wall completion and negligible maintenance cost. And, all at a cost considerably below materials lacking many of the qualities of the **COLOR-N-GLAZE** unit.

Production of **COLOR-N-GLAZE** Block is an entirely new service to the building industry provided by reliable, well-established concrete block plants located strategically throughout the United States. **COLOR-N-GLAZE** Block is made under a carefully controlled plant procedure utilizing the very best quality machine-made standard concrete block with **COLOR-N-GLAZE** face-finishing added under an entirely new and revolutionary process that has been ten years in development.

COLOR-N-GLAZE Block is waterproof and weatherproof which adapts it to outside use equally as well as for the most exacting of interior uses. You can design a complete load-bearing wall with permanently glazed color inside and out with **COLOR-N-GLAZE** Block.

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Please send information on **COLOR-N-GLAZE** Block.

Name.....

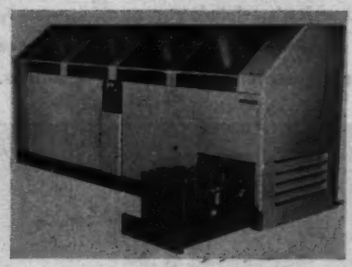
Company.....

Address.....

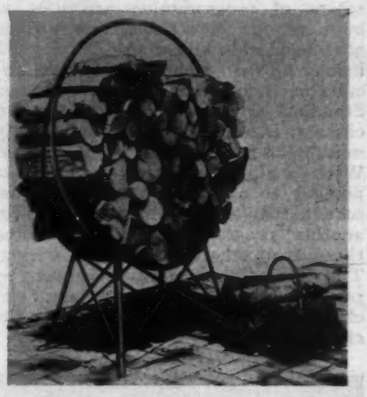
City.....Zone.....State.....

AE PRODUCTS

(Continued from page 275)



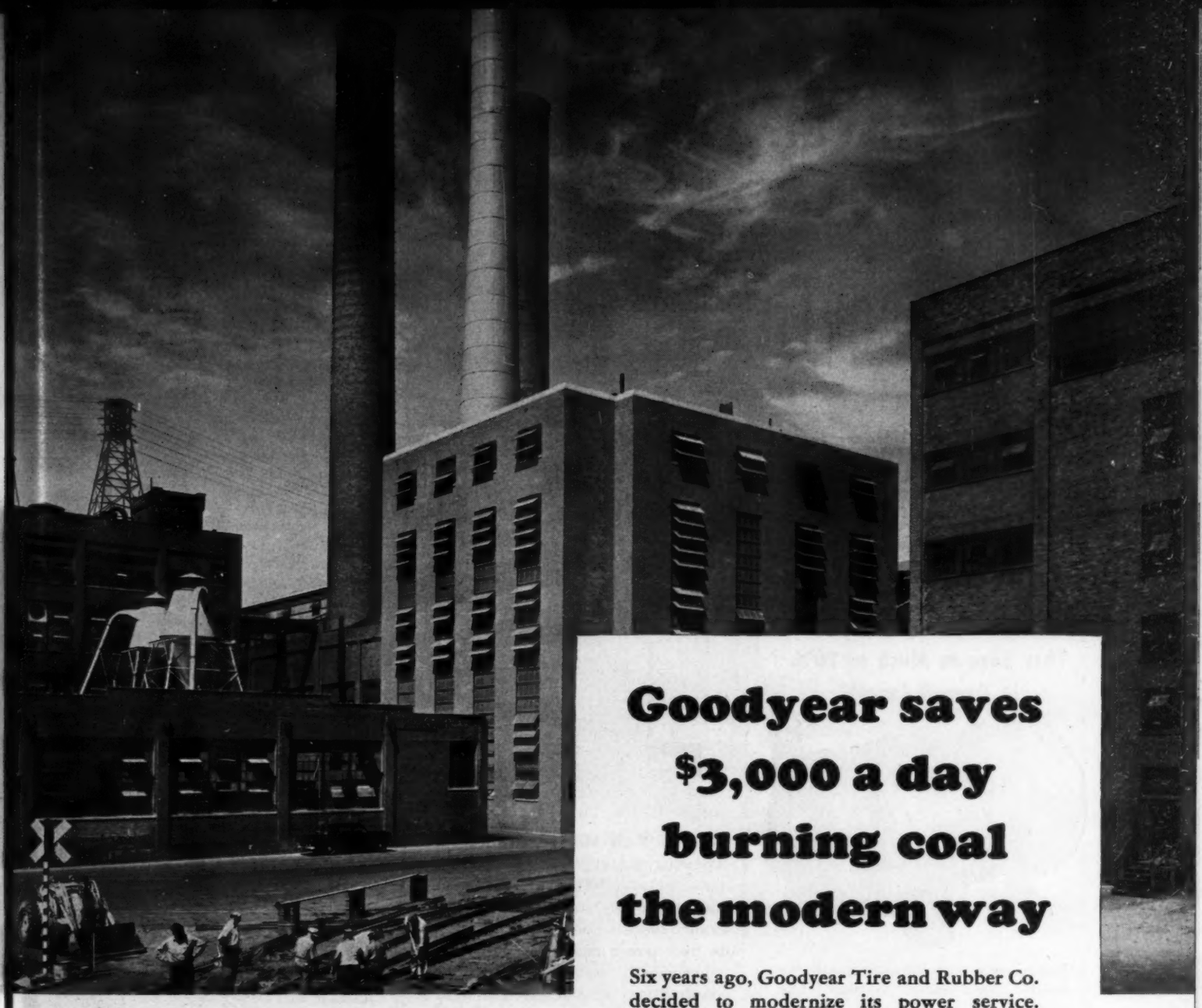
Slide-out Compressor Housing is now being built into Nor-Lake refrigeration units with recessed compressors. Each box is constructed so that the compressor can be pulled out for service without disconnecting any plumbing or electrical fixtures. *Nor-Lake, Inc., Dept. AA, Hudson, Wis.*



Cord-Wood-Crib is a large, circular, metallic storage crib for cord wood which can be kept out of doors for proper seasoning of wood for burning. It can hold a little over a cord of 24-in. logs and weighs only 15 lb. *The Slavert Co., Inc., Cambridge 42, Mass.*

Walnut Laminated Plastics. Two new walnut patterns — *Tawny* for the lighter shade and *Autumn* for the darker — have been introduced in the Formica wood grain line. The decorative sheets used in making these patterns are being printed by a new process — three-color, registered, gravure printing, which is said to give a more natural-looking, larger figured wood. *The Formica Co., Cincinnati 32, Ohio.*

(Continued on page 278)



Goodyear saves $3,000 a day burning coal the modern way

Six years ago, Goodyear Tire and Rubber Co. decided to modernize its power service. Among other considerations, 70% of the firm's steam-generating equipment was over 30 years old. As a result, operating efficiency was only 65%. Power needs at Goodyear's Akron plants ran so much greater than capacity that additional power had to be purchased. Goodyear engineers and engineering consultants, Sargent & Lundy, were called in to study the problem and recommend a solution.

Now two 220,000 lb.-per-hr. boilers have replaced six 50,000 lb.-per-hr. units. Coal and ash handling are automatic. Controls are fully automatic. And not only have these and other changes resulted in dependable power service, but steam generating efficiency is now 82%—saving Goodyear $3,000 a day. For further information or additional case histories showing how other plants have saved money burning coal, write to the address below.

NATIONAL COAL ASSOCIATION
Southern Building, Washington 5, D.C.

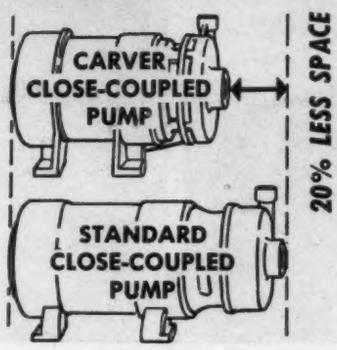
Consult an engineering firm

Designing and building hundreds of heating and power installations a year, qualified engineering firms can bring you the latest knowledge of fuel costs and equipment. If you are planning the construction of new heating or power facilities —or the remodeling of an existing installation—one of these concerns will work closely with your own engineering department to effect substantial savings not only in efficiency but in fuel economy over the years.

facts you should know about coal

Up-to-date coal burning equipment can give you 10% to 40% more steam per dollar • Automatic coal and ash handling systems result in a virtually labor-free plant • Coal is the safest fuel to store and use • No dust or smoke problems when coal is burned with modern equipment • In most industrial areas, bituminous coal is the lowest-cost fuel available • Between vast coal reserves and mechanized coal production methods, you can count on coal being plentiful and it's price remaining stable.

NEW CARVER
MODEL B PUMPS
are really
CLOSE COUPLED



They Save as Much as 20% in Overall Length!

When we say close-coupled we really mean close-coupled. The illustrations dramatically tell the story.

Mounted on the sturdy, short shafts of close-coupled motors these highly efficient Carver Model B Pumps are stronger, quieter in operation, more attractive . . . better in every way for every job.

And extremely important, of course, is the extraordinary compactness which makes them ideal where space is limited.

GUARANTEED PERFORMANCE assures lasting satisfaction.

CARVER also manufactures Frame-Type Pumps, Split-Case Pumps, Submersible Sump Pumps and Self-Priming Pumps.

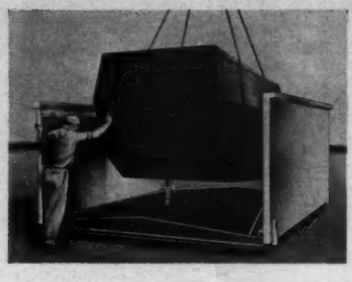
Ask for Bulletins

CARVER PUMP CO.
1466 Hershey Avenue
Muscatine, Iowa

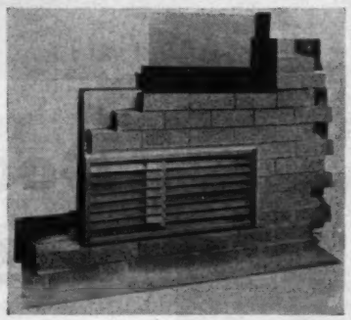
The quality name in pumps

AE PRODUCTS

(Continued from page 276)



Spring-balanced Roof Hatch, claimed by the manufacturer to be the world's largest, has an opening which measures 12 by 10 ft. One man can easily lift the covers, each of which weighs about 400 lb, through use of new Bilco spring compression cylinders. *The Bilco Co., New Haven, Conn.*



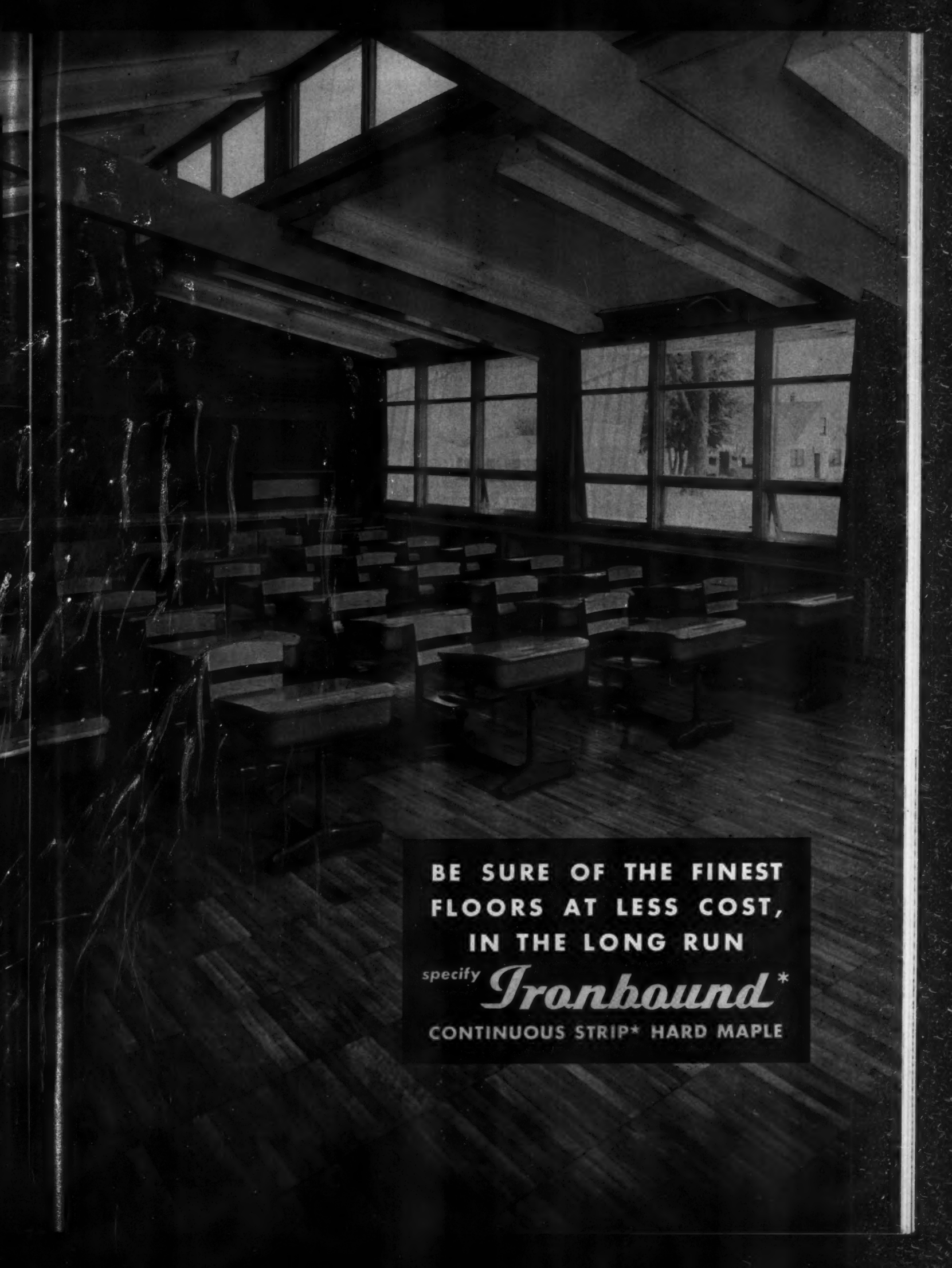
Built-in Wall Air Conditioners feature exterior louvers of anodized aluminum flush with the facade of the building and decorative convector covers for room interiors. Each unit works under its own power and air supply and is independently serviceable. Spilling of condensation on the exterior wall is eliminated by a design which involves drainage of excess moisture into the return lines of the heating system. *Amic Mfg. Corp., 21–25 44th Ave., Long Island City 1, N. Y.*

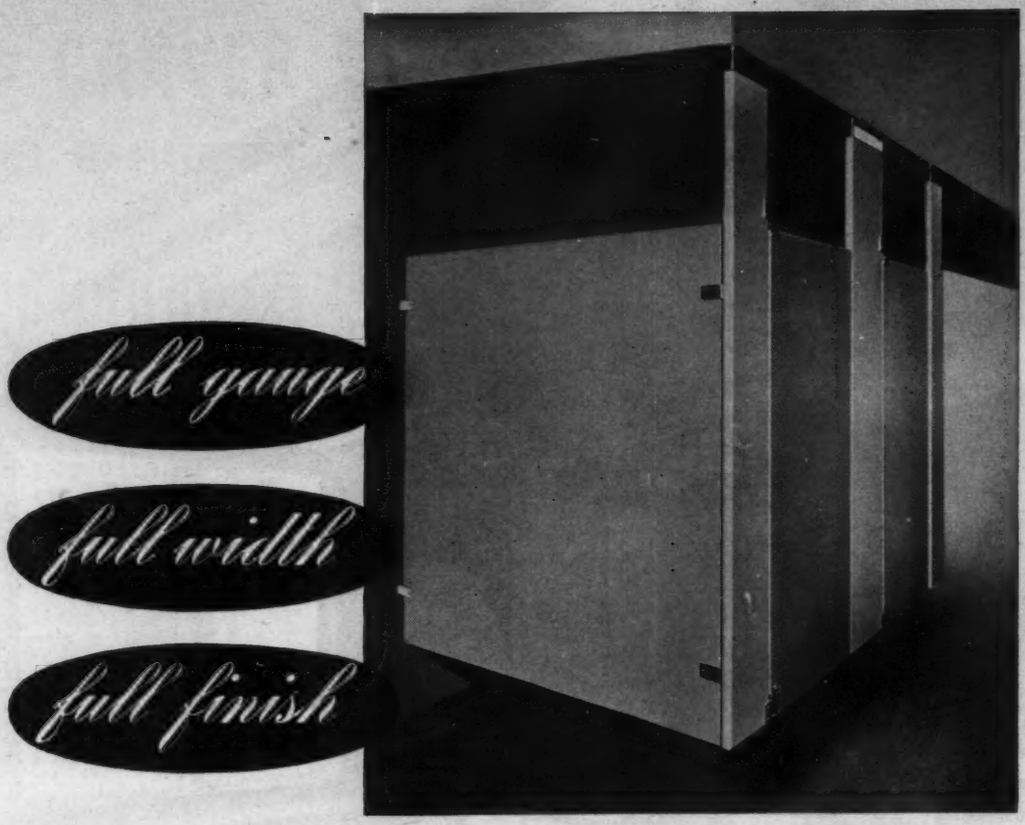
Sliding Doors that have flush panels and no exposed hardware are possible with Mulray hardware. A simple switch and double track arrangement permits either door to be shunted back and behind the other door. Both doors can be removed easily. The hardware fits all cabinets with door openings from 18 in. to 6 ft wide and up to 4 ft high. Door panels can be from ½ to ¾ in. thick. *Mulray Products, Inc., 68 First St., New Rochelle, N. Y.*

(Continued on page 284)

Authorized Ironbound Installers assure and guarantee installation and service

Akron 8, Ohio
The Akron Floors Co.
Birmingham, Ala.
E. P. Cuthrell Flooring Co.
Boston 34, Mass.
National Floors Co.
Canton 8, Ohio
Canton Floors, Inc.
Chicago 41, Ill.
Chas H. Anderson Floors, Inc.
Chicago 51, Ill.
Austin Flooring Co.
Cincinnati 26, Ohio
Cincinnati Floor Co.
Cleveland 9, Ohio
The Ironbound Co. of Cleveland
Dallas 8, Texas
Trinity Floor Company
Decatur, Ga.
Matthews Flooring Co.
Denver, Col.
Reeves-Ryan & Co.
Detroit 38, Mich.
Whitcomb-Bauer Flooring, Inc.
Kansas City 14, Mo.
Chas H. Anderson Floors, Inc.
Los Angeles 6, Cal.
A. B. Rice Co.
Miami, Fla. (South Florida)
Rowell-Southern Flooring, Inc.
Milwaukee 13, Wisc.
Shannon Floor Company
Minneapolis 19, Minn.
Chas. H. Anderson Floors, Inc.
Montreal, P.Q.
Montreal Sales Office
New York 51, N.Y.
Storm Flooring Co., Inc.
Philadelphia 21, Penna.
Federal Hardwood Floor Co.
Pittsburgh 19, Pa.
Standard Floor Company
Portland 13, Oregon
J. W. Giselman
Raleigh, N. C.
R. L. Dresser
Rochester 10, N.Y.
Yaeger Floor Company
St. Louis, Mo.
Missouri Floor Company
San Francisco 7, Cal.
Acme Floor Company
Seattle 99, Wash.
Queen City Floor Company
South Bend 15, Indiana
G. E. Weaver Company, Inc.
Spokane, Wash.
Southern Hardwood Company
Toronto 3, Ont.
Northern Flooring Co.


BE SURE OF THE FINEST
FLOORS AT LESS COST,
IN THE LONG RUN
specify Ironbound*
CONTINUOUS STRIP* HARD MAPLE



Nicholson Type AC Toilet Compartment. Ceiling hung. Ultra-modern. Sanitary.

Nicholson Metal Partitions

better built . . . for lasting service

Only time will tell . . . whether or not the average toilet compartment will deliver long life and real service-ability. But Nicholson compartments give you "full" assurance right from the start—full gauge metals . . . full width partitions . . . full final finish. Nicholsons' are built to stand up and still stand out . . . even after years of steady service.

- **heavier gauge steel:** panels—full 20 gauge
  pilasters—full 16 gauge
  headrail and tubing—full 16 gauge
  stainless steel plinth—full 20 gauge
- **thicker partitions:** doors and panels—full 1" thick
  pilasters—full 1¼" thick
- **extra protective coats:** galvanized, bonderized coatings
  zinc chromate primer
  2 coats of synthetic baked enamel

Specify *for lasting service.* Specify Nicholson.

Available in the following types—and wide selection of colors:

Type A—floor braced	Type AC—ceiling hung
Type AR—overhead braced	Type ARP—panel type
Type B—flush type	Type BP—panel type

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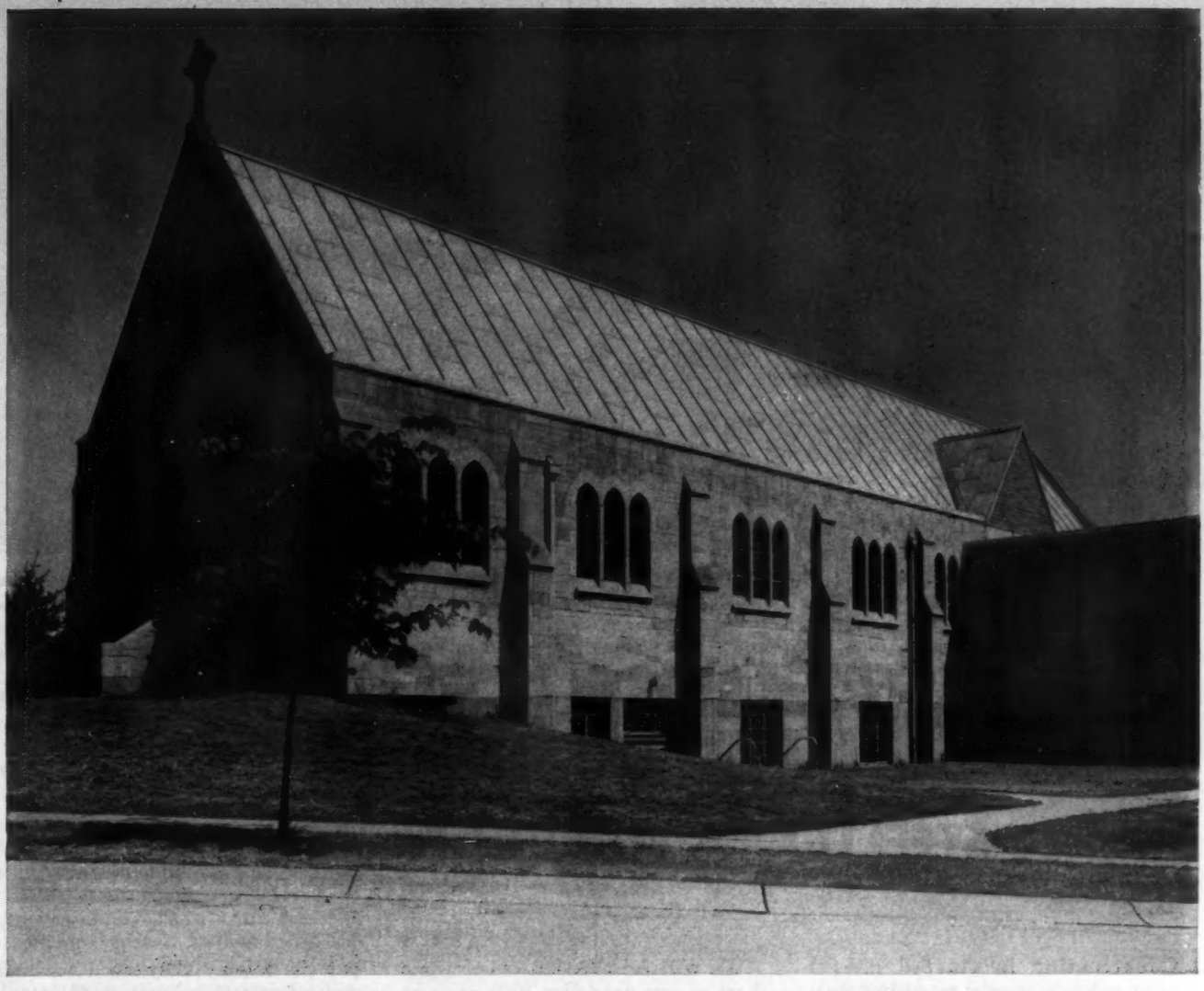
W. H. NICHOLSON and Company

METAL PARTITIONS • TRAPS • VALVES • FLOATS

14 OREGON STREET, WILKES-BARRE, PA. • SALES AND ENGINEERING OFFICES IN 50 PRINCIPAL CITIES



Project: St. Andrews Episcopal Church • Location: New Kensington, Pa. • Architect: J. Phillips Davis, Pittsburgh, Pa.
Processors and Erectors: Overly Manufacturing Company, Greensburg, Pa.

Alodizing Aluminum with Architectural Alodine®

REDUCES GLARE MORE THAN 30%

This church in New Kensington, Pennsylvania has an Alodized aluminum roof with the appearance and trouble-free life of aged copper. Architectural Alodine, as developed by ACP, is a revolutionary chemical that converts aluminum surfaces to an amorphous phosphate, that reduces glare 30% or more, cuts costs and adds many years to the already long life of aluminum. Alodized surfaces range in color from gray-green to the deeper green that resembles patina of aged copper. Since the use of Alodized Architectural Aluminum will spread rapidly, you will wish to be completely informed about its possibilities. Write for detailed information.

Specify Alodized Architectural Aluminum for greatest protection and least maintenance

AMERICAN CHEMICAL PAINT COMPANY, Ambler 22, Pa.

DETROIT, MICHIGAN NILES, CALIFORNIA WINDSOR, ONTARIO

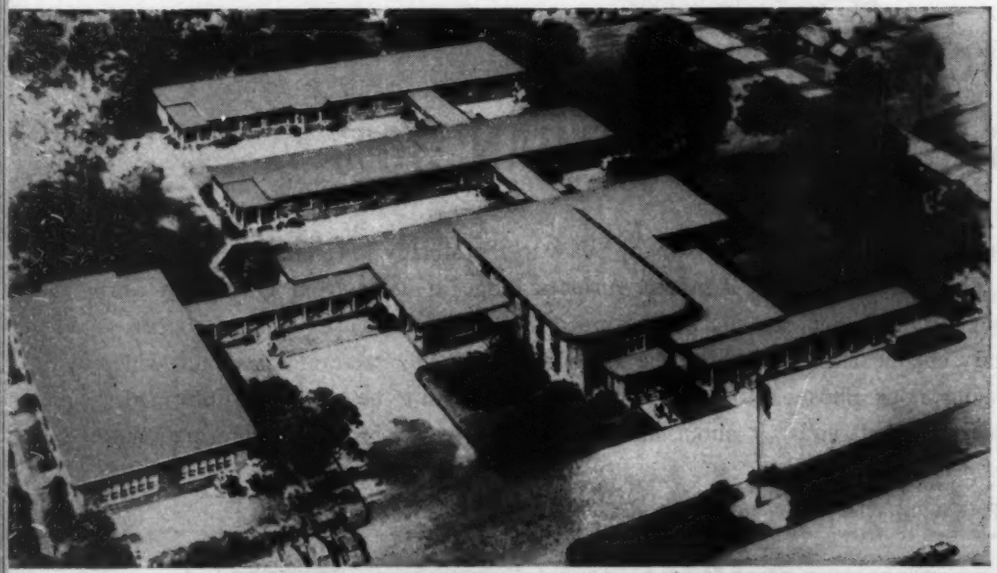
CHEMICALS ACP PROCESSES

In Pittsburgh, Pa., the economy and labor saving features of Steeltex resulted in a decision to use Steeltex in the Roberts Elementary School in Penn Township. Architect: Joseph Hoover, A.I.A., Pittsburgh. Contractor: Branna Construction Corp., Pittsburgh.

Faster Construction At Lower Cost Makes STEELTEX® A Natural For New Schools

Construction is started on 20 new schools every working day in the year somewhere in the United States. Yet we can't keep up with the demands for more schools.

We will be 176,000 classrooms short of our needs by 1965 even at the present building rate. School officials trying to cope with this situation face a tough financing problem. Because it's hard for them to get the money they need to build new schools, they must get the greatest possible value for every dollar they spend.



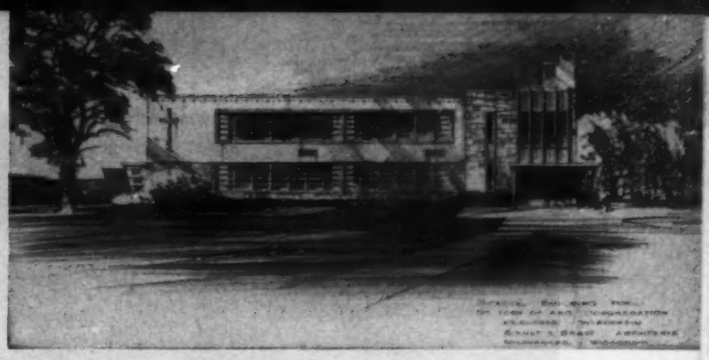
In Brownsville, Fla., cost of construction was a big factor in building junior high school. Steeltex helped stretch construction dollars. Architect: Frank Sindelar, A.I.A., Pensacola, Fla. Contractor: E. M. Hall Construction Co., Pensacola.

Pressure is on architects and contractors to use better materials which provide savings and speed construction of well-designed, sturdily-built schools. That's one big reason why more and more Pittsburgh Steeltex is being used for reinforcing in floors and roofs—it provides a better construction job faster and at lower cost.

Steeltex, the wire mesh lath which carries its own form right on its back, was the choice of architects and contractors for the representative new schools pictured on these pages. These jobs are typical of large and small public and parochial schools in all parts of the country which are being built with Steeltex because it helps answer the all-important question: "How can we make the best possible use of the limited funds available?"

The men responsible for designing and building these school buildings have this to say about Steeltex:

In Ann Arbor, Mich., a new $6.5 million high school used Steeltex for about 300,000 square feet of floors and roof decks. Architect: Fulton, Krinsky & Dela Motte, Cleveland, Ohio. Contractor: Sorensen-Gross Construction Co., Flint, Mich.



In Okauchee, Wisc., good design and sturdy construction were the keynotes of the St. Joan of Arc School. Steeltex went into all floors. Architect: Brust & Brust, Milwaukee. Contractor: Oliver Construction Co., Oconomowoc, Wisc.

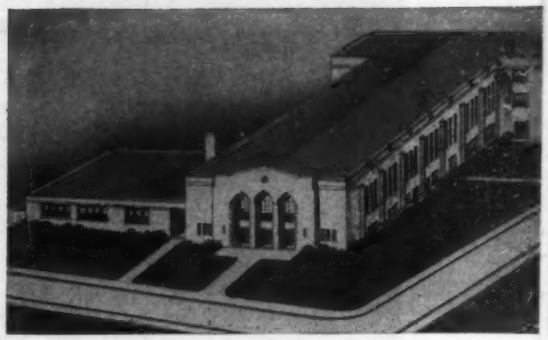
Architect: "Steeltex gets credit for contributing to a very low construction cost—$1 per cubic foot. Construction with Steeltex is faster, easier, without leak-through; the slab is stronger and the weight distribution is more even. Use of Steeltex helped us meet the budget requirements of our client. It is an ideal form for concrete floors and suspended decks."

Contractor: "We used Steeltex because it is low in cost, is easy to handle and provides strong floors which can be built faster. Steeltex cut our floor construction costs by approximately 20 per cent. It is economical to install, makes forms unnecessary, and is readily available. The water resistant backing on Pittsburgh Steeltex holds the water in the concrete and prevents drip, maintaining the proper ratio of the mix and permitting the concrete to cure uniformly."

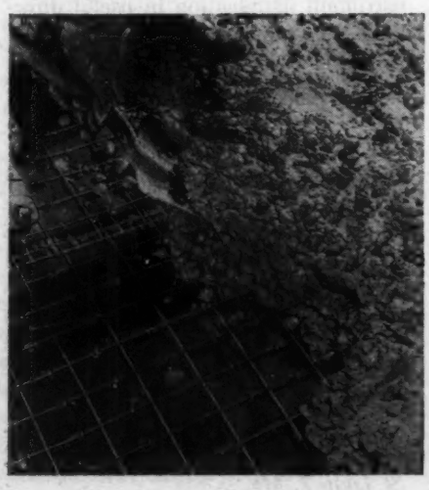
School Board Official: "We conferred with our architect and contractor and learned that Steeltex would reduce the cost of our school substantially if we used Steeltex instead of a more costly type of steel flooring. We were still able to maintain exacting high standards which we had originally established. We changed our plans and used Steeltex to take advantage of this real saving. Steeltex was a bargain for us."

Wherever the construction dollar must be stretched without sacrificing quality construction, Steeltex can help. If your plans call for construction of a school or any other project with poured concrete floors, roofs, plaster walls or ceilings, or Portland cement (Stucco) exteriors, there is a special type of Pittsburgh Steeltex that can do a better job for you faster at lower cost.

Steeltex offers you the same advantages enjoyed by the designers and builders of the schools pictured here. Call the nearest district sales office to learn how you can do a better job faster with Steeltex. Or you can write to Pittsburgh Steel Products Co. for a free copy of the Steeltex book.



In Cheltenham, Pa., near Philadelphia, speed of installation and economy made Steeltex a good choice for the St. Joseph School and Church. Architect: Gleeson and Mulrooney, Philadelphia. Contractor: James J. Clearkin Co., Philadelphia.



Send for your copy of "Pittsburgh Steeltex—Backbone Of Concrete, Plaster, Mortar."

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Pittsburgh Steel Products Company

a subsidiary of

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FOR SUBFLOORS, WALL OR ROOF SHEATHING

CUT APPLICATION COSTS with

GENUINE DOUGLAS FIR PLYWOOD

PLYSCORD®

INTERIOR TYPE GRADE C-D

SHEATHING

DFPA TESTED QUALITY

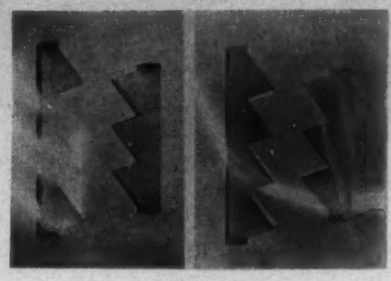
SAVE up to 50% on application costs using time-tested PLYSCORD sheathing. Walls sheathed with PLYSCORD are up to twice as strong. On roof decking, PLYSCORD won't shrink or swell; the finish roofing won't be damaged by buckling. PLYSCORD subfloors provide a smooth, level working platform —firm, cup-free, squeak-free. Remember: PLYSCORD!

EXT-DFPA PLYSHIELD PLYPANEL PLYSCORD PLYBASE PLYFORM

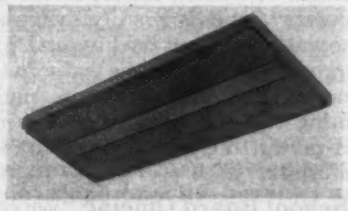
INSIST on DFPA grademarked fir plywood! EXT-DFPA and PLYSHIELD for outdoor use . . . PLYPANEL for paneling, built-ins . . . PLYSCORD for sheathing . . . PLYBASE for underlayment . . . PLYFORM for concrete form work. Other grades for other uses.

AE PRODUCTS

(*Continued from page 278*)



Glass Block as a fenestration material for use on vertical surfaces has been developed. "Selective transmission" of light is possible by the cut of the interior prisms in the "Solar-Selecting" blocks, so that there can be a predetermination of the amount, brightness and distribution of light, and therefore to some extent solar heat, entering a room. The photographs above show how light from a bright 45 deg sun is reversed and sent back toward the source (left), whereas light arriving from a higher, 65 deg sun is directed through the block and properly diffused into the room (right). Tests have been conducted on these blocks for about three years in the Daylighting Laboratory of the Engineering Research Institute of the University of Michigan for *Owens-Illinois, Toledo 1, Ohio.*

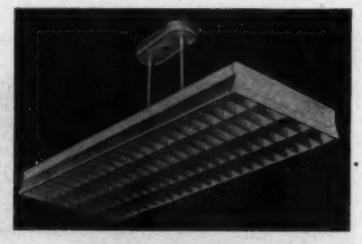


Fluorescent Luminaires in the new *Thin-Lite* series are available with *Corning* #70 low-brightness lens. The lens has low surface brightness and delivers maximum illumination in useful directions. The luminaire is designed for installation where surface mounting with a bare mimimum of depth is desired. *Lighting Products, Inc., Highland Park, Ill.*

Ceiling-mounted Fixtures. Since 75 per cent of the Day-Brite *Plexoline* fluorescent fixtures are mounted to the ceiling, they are now being produced with top plates an integral part of the fixture. This eliminates separate top plates and also eliminates light leaks from the top of the fixture. The open-top fixtures are still being produced, however, for suspension mounting. *Day-Brite Lighting, Inc., 5411 Bulwer Ave., St. Louis 7, Mo.*

A|E PRODUCTS

Illumination by incandescent light bulbs has been refined by *Softlight*. The *Softlight* produces a special effect by means of a pearl pink coating which is applied to the inner surface of the bulb. The manufacturer claims that it cuts down shadows and harshness (as shown in the two photos above in which a conventional lamp is used in the left picture and *Softlight* in the right), enhances the richness of home furnishings and complements flesh tones. The lamps are available in the 75-, 100- and 150-watt sizes. *Sylvania Electric Products, Inc., 1740 Broadway, New York 19, N. Y.*



Fluorescent Fixtures featuring "translucent steel" side panels of *Perfalux* are called the *Louvron* line. The translucent steel is a sturdy-gauge steel which is perforated with thousands of fine holes coated inside and out with a plastic film which fills and converts each hole into a tiny lens. The fixtures are available in 4- and 8-ft lengths and two- and four-light widths, rapid-start or slimline, surface or stem mounted, with 35–25 deg or 35–45 deg louvers. Steel or polystyrene side panels are available in addition to Perfalux. *Lightolier, Inc., Jersey City, N. J.*

SlatoSteel Chalkboard, made with a Porcenell silicate coating over steel, has a permanent green color with a reflectance factor of not over 20 per cent. The sprayed coating is said to assure a uniform surface with just the right bite for chalk. Magnets can be used to hold papers and charts on the board. The light weight of SlatoSteel makes it easy and cheap to ship and install. *Beckley-Cardy Co., 1900 N. Narragansett Ave., Chicago 39, Ill.*

(Continued on page 288)

IT'S NOT THE SAME WITHOUT THE NAME
INSIST ON THIS GRADE TRADEMARK
DFPA TESTED QUALITY
GENUINE
DOUGLAS FIR PLYWOOD
PLYSCORD
INTERIOR TYPE GRADE C-D
SHEATHING
THIS distinctive PLYSCORD stamp on the panel identifies genuine DFPA fir plywood sheathing — quality-tested by DFPA to protect the buyer and assure performance. Write for new PLYSCORD calculator — handy slide rule giving recommended nailing procedures, thicknesses, etc. FREE from Douglas Fir Plywood Association, Tacoma 2, Wash.
EXT-DFPA
PLYSHIELD
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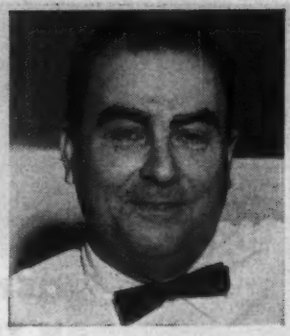
PLYSCORD
PLYBASE
PLYFORM
INSIST on DFPA grademarked fir plywood! EXT-DFPA and PLYSHIELD for outdoor use . . . PLYPANEL for paneling, built-ins . . . PLYSCORD for sheathing . . . PLYBASE for underlayment . . . PLYFORM for concrete form work. Other grades for other uses



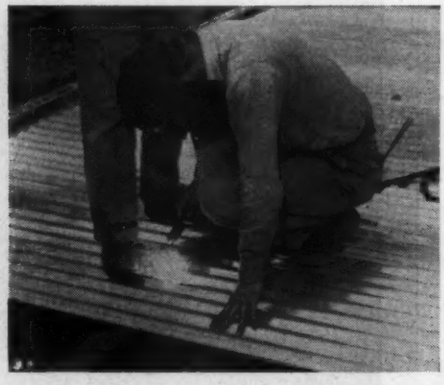
Roofing-Contractor's Superintendent (at left)
JACK OWEN says, "You've got a roof of superior strength when Corruform and Tufcor are used. Big savings in time and labor costs because these materials are easy to place and weld."

Contractor's Representative (at right)
HAROLD HERES says, "Corruform and Tufcor keep the entire job moving ahead on schedule. That means savings in construction costs."

TUFCOR SPEEDS COMPLETION OF MODERN BATON ROUGE SCHOOL

30,000 SQUARE FEET OF TUFCOR

Quickly Placed. Tufcor and Corruform sheets are delivered to job site pre-cut to fit framing. A crew of two or three men can easily place 5,000 to 10,000 square feet, in a single working day.



Lightweight High-strength Steel Deck is welded to purlins. Deep-corrugated Granco *tough-temper* steel has high load carrying capacity—permits wider joist spacing, reduces framing costs.

Vent Clip Prevents Vapor Pressure Build-up. Granco vent clips, inserted on lip of each sheet, one between each support, prevent vapor build-up in roof slab under intense summer sun.

Granco Products keep job on schedule, reduce labor costs, save time.

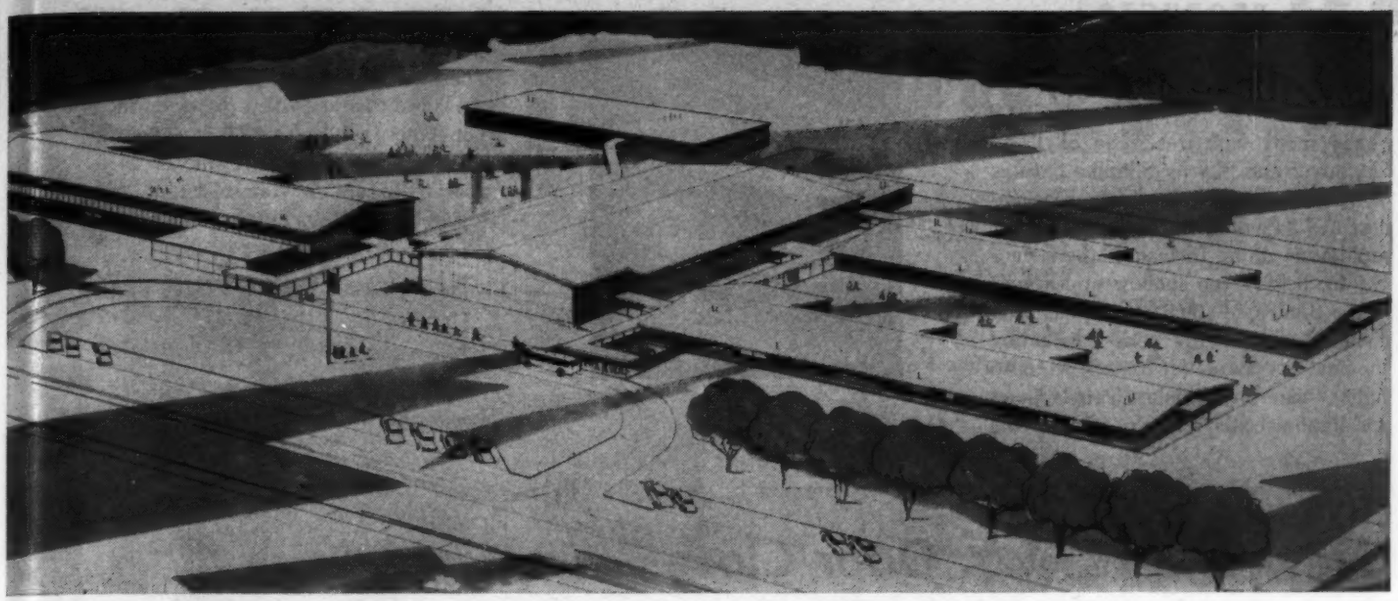
BATON ROUGE, LOUISIANA—One of Louisiana's most modern schools is scheduled for fall completion. Situated on the northern edge of this capitol city, the Glen Oaks School consists of five buildings, connected by covered walks.

Heavy Duty Corruform and Tufcor, specified for the buildings' roof slabs, contributed to substantial savings in time and labor costs. For example, on two of the Glen Oaks buildings, 30,000 square feet of Tufcor was laid in 30 hours.

Harold Heres, Vice President of Caldwell & McCann, contractors on the new Glen Oaks School, says, "there are no unexpected slow-ups when Tufcor or Corruform are specified. That's what we like about these materials—you can be sure you've got a tough, strong roof and construction is much faster."

Pre-cut to fit the building frame, Tufcor and Corruform sheets arrived at the Glen Oaks building site ready for placing. As soon as structural steel frame was completed, crews were able to place and weld units to frame and the concrete placing operation started immediately.

Tufcor and Corruform make roof construction a simple, fast operation, resulting in time and material savings. For information, estimates or costs on your building plan, contact home or district office, attention Dept. R-2.

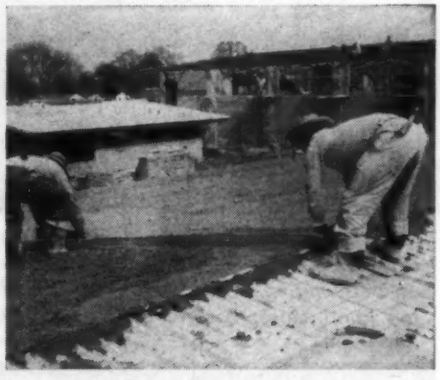


Glen Oaks School, *Baton Rouge, Louisiana* • Architects: *Manson and Thompson, Baton Rouge, Louisiana*
Associate Architects: *Goodman and Miller, Baton Rouge, Louisiana* • Contractor: *Caldwell & McCann, Baton Rouge, Louisiana*

ROOF DECK LAID IN 30 HOURS

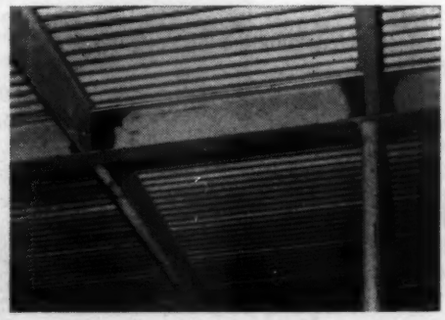
Immediate Working Platform. In place, Tufcor and Corruform provide an immediate safe, usable working surface. Light mesh is added for shrinkage control of lightweight insulating concrete.

Insulation Placed on Tufcor in fast operation. Lightweight insulating concrete (4-5 lbs. psf) on steel deck provides insulation. Bond occurs between concrete slab and galvanized sheets.



Permanent, Incombustible Roof Deck is provided by cast-in-place slab. When concrete is screeded to depth of 2½"-3", load tests show safety factors of 6 to 8 for finished deck.

Ideal Base for Built-up Roof. This deck is ideal from two standpoints — a good deck for the roofer to work on—more important, throughout the life of the building, it is an inorganic permanent base for the built-up roof.



An Economical, Fire-Safe Roof. Finished roof offers maximum in permanence, fire safety. Bright galvanized surface gives lasting protection; affords light reflection when left exposed. However, any normal ceiling treatment may be applied.

see our catalog in S or write for copy

GRANCO

STEEL PRODUCTS CO.

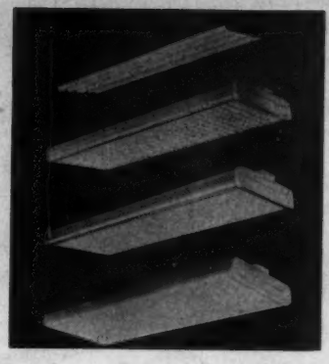
Also manufacturers of Cofar and Roof Deck

Subsidiary of GRANITE CITY STEEL CO.

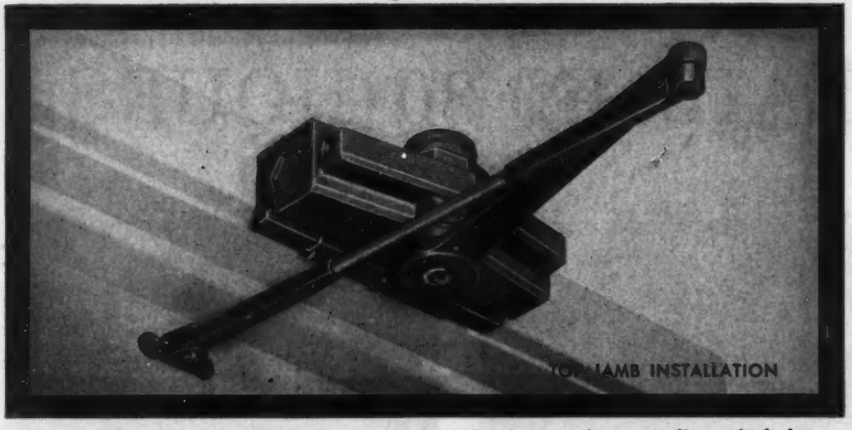
Main Office: Granite City, Illinois
District Offices: Dallas • St. Louis • Kansas City
Chicago • Minneapolis • Atlanta
Distributors in 80 principal cities

(*Continued from page 285*)

Fluorescent Fixtures. The Skyliner, Skylouver and Skyray Slimline fixtures of Electro Silv-A-King have been redesigned to match the bipin fluorescent rapid start units. Instead of the former 6¾ in. height, the shallow appearance of the thin rapid-start fixtures has been achieved. The entire series, including the new Sky/Lume (at bottom of photo right), can interchange rapid start and slimline baskets. *Electro Silv-A-King Corp., 1535 S. Paulina St., Chicago 8, Ill.*



New SCHLAGE Door Closer Eliminates Unsightly Brackets...



From SCHLAGE—leader in locks—comes the first architecturally styled door closer . . . Unique mechanical design permits the installation of Schlage closers on outswinging doors without soffit and corner brackets . . . Installed on the top jamb, closer is clear of the door opening insuring maximum headroom.

Completely Reversible Without Disassembly

Schlage's double-ended shaft permits arm attachment on top or bottom for operation on either side of door, regardless of swing. This feature means that, for the first time, a standard closer can offer the unique top jamb installation shown above.

Easier to Adjust

Two simple screw adjustments provide any desired combination of swinging speed and closing power . . . in a matter of seconds.

Easier to Install

Use of separate mounting plates eliminates need for holding closer during installation. Result—far simpler installation; real economy of time and labor.

Full Rack and Pinion Mechanism

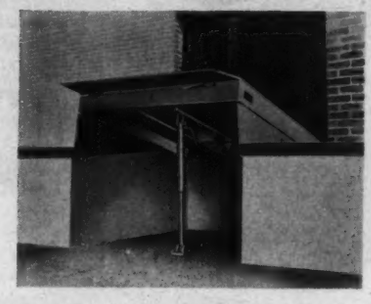
Complete control throughout the entire swing of the door is provided by a full rack and pinion mechanism. Teeth are pitched for greatest strength and are sufficient to permit 230° shaft rotation.

Write today for complete information on the new Schlage closer . . . ask for Booklet #680-A-10

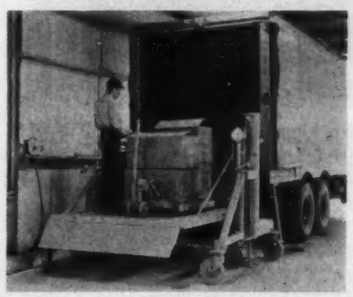
SCHLAGE

SCHLAGE LOCK COMPANY
San Francisco • New York • Vancouver, B.C.
Write to Schlage Lock Company, San Francisco

Vicretex Tackboard is available with a backing of laminated wood and insulation board covered with a plastic surface that comes in 29 colors. The tackboard, which can be had in a frame or as a separate fixture, is stain-resistant and washable. *L. E. Carpenter & Co., Inc., 350 Fifth Ave., New York 1, N. Y.*



Trans-O-Matic Ramp, with built-in automatic floating action, handles all loading and unloading regardless of truck-bed heights, because the ramp lip rides with fluctuating height of the truck bed as load weight changes. The lip travels through a 30-in. arc, moving up or down 15 in. from loading dock level. The non-skid deck, of ⅜-in. checkered steel plate, measures 6 by 8⅓ ft. When not in use, the ramp can be positioned at platform level to permit normal cross-over traffic. The entire power unit, including an automatic safety switch to lock the unit if the truck should pull away, is located under the ramp. No ground excavation or piping is needed for installation. *Globe Hoist Co., E. Mermaid Lane at Queen St., Philadelphia 18, Pa.*



Portable Loading Dock, which simplifies locating loading facilities and makes possible building additions, rolls right up to the tailgate of incoming trucks. A hand truck, or powered truck, elevated to the motor truck bed, transfers loads to the portable dock. The *Portadock,* which accommodates loads up to 6000 lb, elevates to motor truck beds 56¼ in. high. It occupies a floor area 121 by 110 in. when open and 47 by 110 in. when the legs are swung in and the platform and dock plate folded. *The Raymond Corp., Greene, N. Y.*

(*Continued on page 292*)

PAINTING ANALYSIS

Learn how new Glidden painting service can help you cut costs!

New Formula NEV-A-RUST dries to a sparkling, high gloss; has greater resistance to rust, acid, gases, fumes. Ideal for structural steel, iron fences, grillwork, smokestacks, metal roofs and all metal surfaces.

Now Glidden offers a no-cost, no-obligation analysis of *any commercial and institutional painting problem.* This new service can be as comprehensive as you wish—anything from stain for a paneled office to special paint formulations to end corrosion on a water tower. A Glidden Painting Analysis can help you train personnel, work out safety markings, make color efficiency tests or work out complete office and plant redecoration!

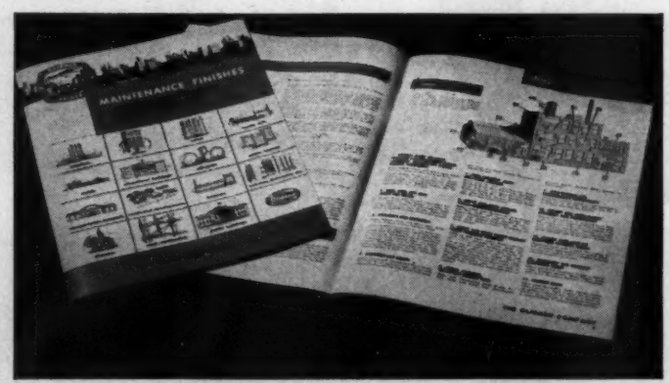
Pictures at left show a few of the ways a Glidden Painting Analysis can help you. For more information or for specific helps, fill in coupon below.

Four-Year Exposure Test of bricks above shows superior durability of SPRED GLIDE-ON — new exterior masonry finish for stucco, brick and asbestos shingles. Brick at left painted with SPRED GLIDE-ON did not peel, chip or flake in four years.

Glidden

Professional Finishes

The Glidden Company
Maintenance Finishes Division
Cleveland 2, Ohio



New catalog includes complete specifications and product guide, selector charts, color chips, information on special finishes of all types — this book is a *must* for reference; training of personnel; purchasing guide.

QUALITY Glidden PRODUCTS

Fill in and mail to The Glidden Co., Dept. AR-1055
11001 Madison Ave., Cleveland 2, Ohio

- ☐ I am interested in complete details of Glidden Painting Analysis.

I am particularly interested in:

- ☐ NEV-A-RUST; other anti-corrosion finishes.
- ☐ Product demonstrations for training purposes.
- ☐ Color Studio Service
- ☐ SPRED GLIDE-ON
- ☐ New Glidden complete-line catalog

Name_____

Title_____

Company_____

Address_____

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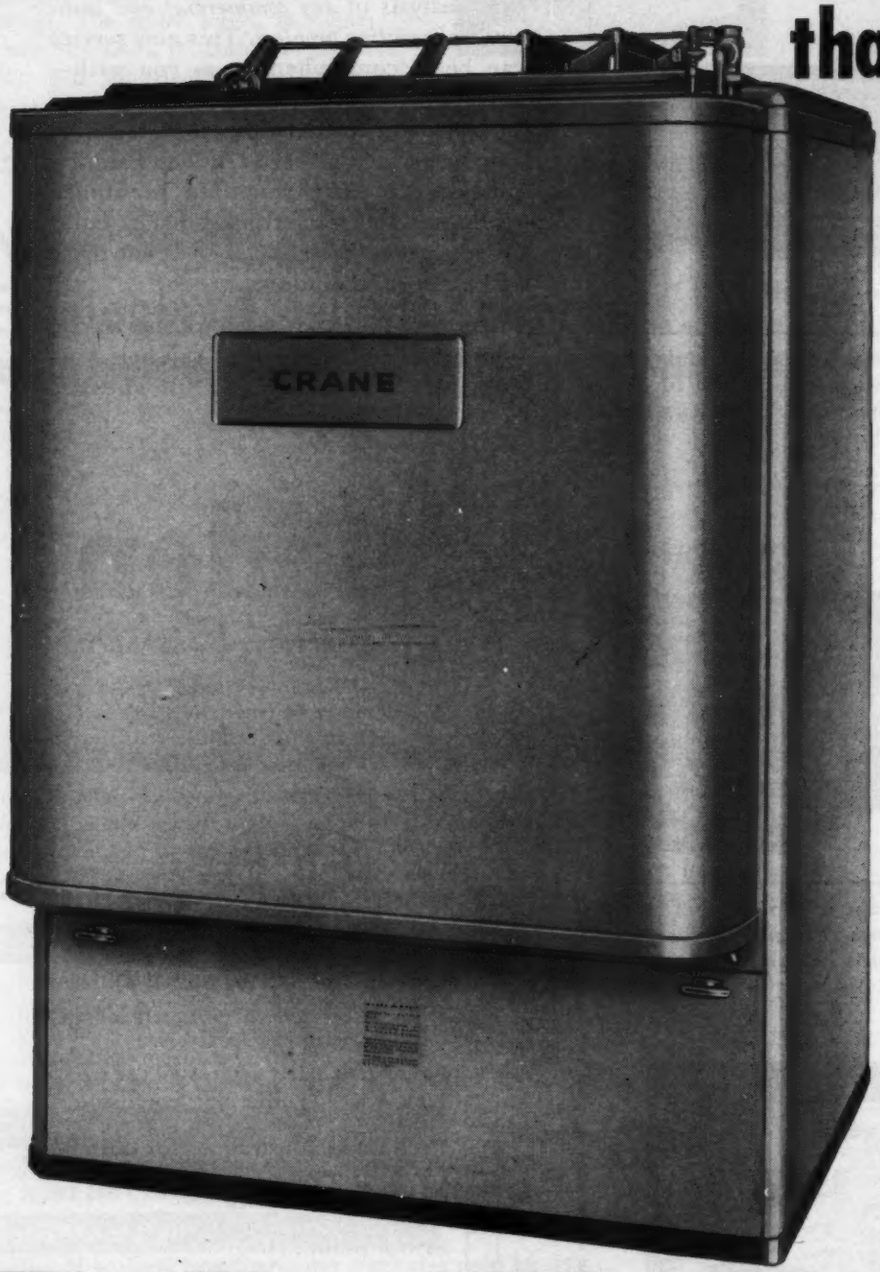
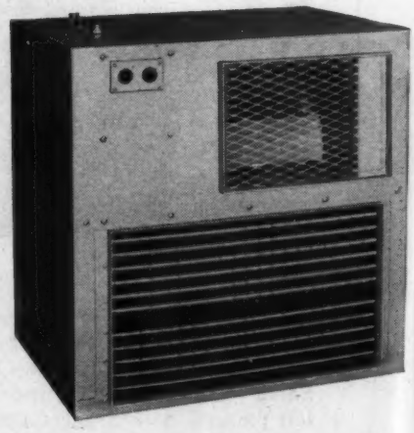
NEWS from CRANE for architects . . .

A WATERLESS AIR

that doesn't have



Air Cooled or Water Cooled, Crane Year 'Round Air Conditioners (including furnace) are handsome units . . . and so compact they fit anywhere.



Air Cooled Compressor-Condenser unit goes outside the house (hidden by landscaping), in the garage, even on the roof or in the attic. No noise disturbance because it's not in the house.

CRANE

R CONDITIONING SYSTEM

ve to be custom-built on the site!

Crane's new *Air Cooled* Year 'Round Air Conditioners have broken through the last two roadblocks to efficient, low-cost air conditioning.

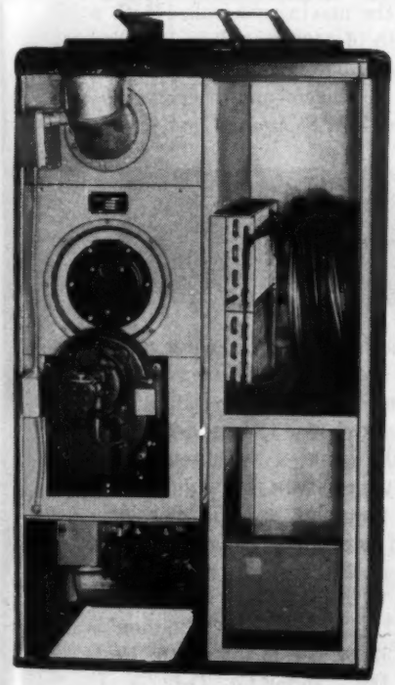
First—*no water is used*, so the cost of water and restrictions on its use no longer stand in your way.

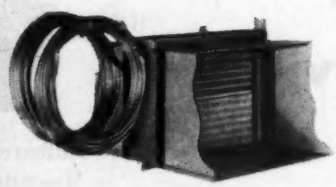
And, second—when you use Crane *Air Cooled* Air Conditioning the system does *not* have to be custom-built on the job by a refrigeration serviceman, as in the past. A special new Crane valve lets the furnaceman do the entire job himself, because the cooling unit is fully charged and sealed at the factory. And the cooling coils go right in the furnace!

Crane *Air Cooled* Year 'Round Air Conditioners are quiet because condenser and compressor are located *outside* of the house where they can't be heard. And maintenance costs are much lower. Crane *Air Cooled* air conditioners, like Crane *Water Cooled* units, have *two* compressors instead of the usual one, so cooling is more efficient and humidity is kept lower.

Both Crane *Air Cooled* and Crane *Water Cooled* units are available in two- or three-ton sizes, with gas- or oil-fired furnace. Or they may be had as Add-On units.

So, even if you've been forced to steer clear of air conditioning in the past, be sure to check into Crane *Air Cooled* Year 'Round Air Conditioning for your next job.





(Above) **Any warm air system** can become a year 'round air conditioner with this Crane-Line twin compressor add-on unit.

(Left) **Crane-Line Year 'Round Air Cooled Air Conditioner** comes with refrigeration system charged and sealed at the factory . . . and with enough copper tubing to reach remote compressor condenser unit.

NOW AVAILABLE!

Crane COUNTERFLOW Year 'Round Air Conditioner for basementless houses using perimeter heating. Air or water cooled!

CRANE CO.
General Offices: 836 S. Michigan Ave., Chicago 5, Ill.
VALVES • FITTINGS • PIPE • KITCHENS • PLUMBING • HEATING

CRANE STARTS ITS SECOND CENTURY OF QUALITY
Founded July 4, 1855

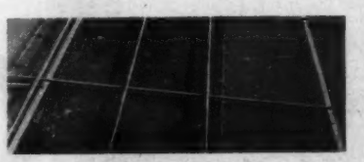
(*Continued from page 288*)

"Escalated" Overland Travel is made possible with the *Trav-O-Lator*, an endless series of moving, metal-treaded platforms which travel on a wheel and track system. Installations of unlimited length can be made in series, with gradients of as much as 14 deg. While high speeds are theoretically possible, actual passenger travel on a prototype model indicate that speeds of 180 fpm are practical. The *Trav-O-Lator* will be

available in two widths: the 32-in. model will carry up to 7500 passengers an hour, while the 48-in. size will carry up to 12,000.

Otis has also introduced an "Elevoice," a system of loudspeakers in automatic elevators which calls its own floor stops, warns passengers who are obstructing its movements and makes other announcements as they are needed. *Otis Elevator Co., Harrison, N. J.*

Moving Sidewalk that can go around corners and carry passengers in two directions consists of a rubber carpet fastened to a train of platforms, or pallets, mounted on rubber-tired wheels which run on a steel track. The rubber carpet stretches like a rubber band and is anchored to the pallets under tension. It needs no reinforcing fabric. It is designed to run at a speed of 1⅔ mph, about average walking speed. The installation shown above is a 300-ft demonstration conveyor in Passaic, N. J. Three of the moving sidewalks, with a total length of 1406 ft, will be installed in the $10 million Dallas air terminal to carry passengers and baggage. *Hewitt-Robins Inc., Stamford, Conn.*



Industrial Strapping Tape for sealing Masonite sheets on which concrete floors are poured is moisture-resistant and therefore prevents leakage of water through the joints of the sheets during drying of the concrete. *Behr-cal* pressure-sensitive strapping tape is glass-fiber reinforced and has a minimum tensile strength of 240 psi of width. It is furnished in 60-yd rolls in widths ranging from ¼ to 3 in. Its adhesion is rated at 52 oz per in. of width. *Behr-Manning Div., Norton Co., Troy, N. Y.*

Single-lever Mixing Faucet in an improved model is available with a clear water spray to fit all three-hole sinks. A pedestal soap dish is optional when used with four-hole sinks. Moving parts are interchangeable with other Gyro single-lever mixing faucets and valves. *Gyro Brass Mfg. Corp., Westbury, L. I., N. Y.*

(*Continued on page 296*)

CAFETERIA • HIGH SCHOOL • BIRMINGHAM, MICHIGAN SWANSON ASSOCIATES • ARCHITECTS
FOOD SERVICE CONSULTANTS • J. E. STEPHENS ASSOCIATES

Van equipped food service of modern Michigan high school

★ Built to serve a fast-growing suburb of Detroit, this huge school plant, which now has facilities for 1200 students and provides for expansion up to 1800, has been featured by the magazine PROGRESSIVE ARCHITECTURE as an excellent example of an ultra-modern high school.

★ The cafeteria illustrated above . . . entirely of shining stainless metal . . . is located on the ground floor adjacent to the kitchen . . . both of which were equipped by Van. This is another shining example of an outstanding food service operation where you expect to find the Van name plate.

★ When you have food service equipment needs . . . be sure to make use of Van's *century of experience*. Call Van in early.

The John Van Range Co.

EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD

Branches in Principal Cities

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KNAPP *MODULAR GRID SYSTEM*

UNIT WALL PANELS

. . . go up in one section FAST

NURSES HOME AND SCHOOL
State Hospital, Jamestown, North Dakota
ARCHITECT: Kurke Associates, Fargo, North Dakota
CONTRACTOR: John W. Larsen, Bismarck, North Dakota

Completely shop-fabricated —ready to install

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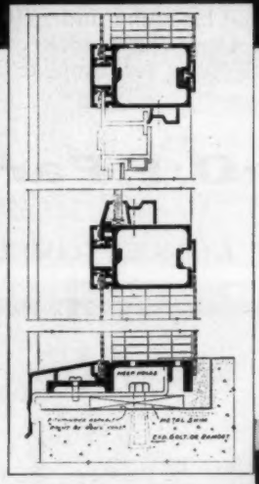
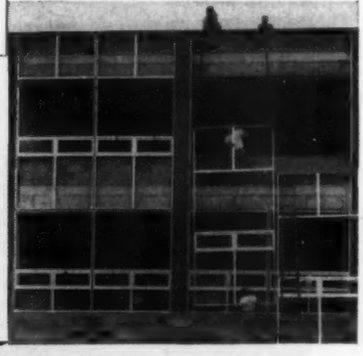


- **FLEXIBILITY OF DESIGN**—Ventilators, fixed glass and insulated panels can be varied to meet individual job requirements.
- **ATTRACTIVE APPEARANCE**—The neat, trim, streamlined appearance adds to the beauty of today's modern buildings.
- **LIGHTWEIGHT**—Lightweight compared with masonry construction, effecting substantial savings in structural framing and footings.



- **COMPLETE FACADE CONSTRUCTION**—System includes framing to fit all door openings specified by architect . . . a complete wall system from one manufacturer with one responsibility.

Investigate today the Knapp Modular Grid System engineered and designed for fast, simple erection. Completely flexible, they consist of factory-assembled units in one, or two story sections that go up quickly at substantial savings over conventional wall construction.

Knapp Modular Grid System includes ventilators, fixed glass areas and insulated panels plus all other accessories that make a finished wall system . . . both inside and out. Available in steel or extruded aluminum.

Unit Wall Panels are firmly secured to the structural framing with a minimum of time and effort.

Let Knapp engineers suggest how our Modular Grid System will fit into your building plans.

Knapp

METAL TRIM Trade Mark

KNAPP BROS. MFG. COMPANY
16 E. 72nd St., Cincinnati 16, Ohio

Knapp Bros. Mfg. Co., Dept. AR-1055
16 E. 72nd St.
Cincinnati 16, Ohio

Please send me complete information on Knapp Modular Grid System.

Name.....

Company..... Title.....

Address.....

City..... Zone..... State.....

so often glass is how we see

Here, at Libbey·Owens·Ford, experts have developed the most distortion-free plate glass ever made in America.

That's tremendously important when you consider these two things:

From inside, almost everything we see *outside*, is seen through glass. So the distortion-freedom of Parallel-O-Plate is vital in homes, schools and almost every kind of building.

From outside, almost everything we see *inside*, is seen through glass. So, Parallel-O-Plate is a "must" for any storefront. And every building we look *at* looks better when its windows are Parallel-O-Plate . . . because this glass is so distortion-free.

In most localities, this remarkable product costs no more than regular plate glass! So insist on it for *your* windows. If you plan on using double-pane insulating glass, be sure you get *Thermopane** made of Parallel-O-Plate. And make sure the mirrors you buy are made of it.

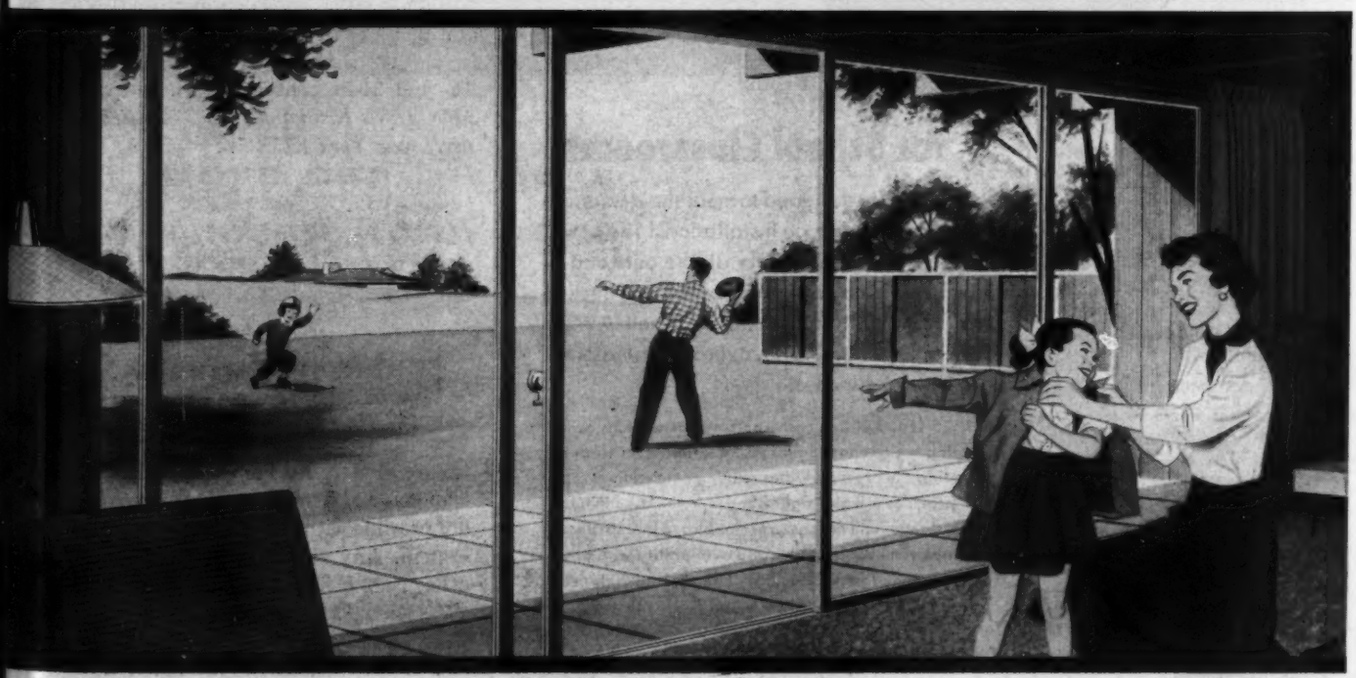
You can get Parallel-O-Plate from any Libbey·Owens·Ford Distributor or Dealer. You'll find his name under "Glass" in the yellow pages of most phone books. Or write to Dept. 75105, Libbey·Owens·Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio, for complete information. *®

L·O·F Parallel·O·Plate Glass

finest plate glass made in America . . . only by

LIBBEY·OWENS·FORD *a Great Name in Glass*

LOOKING IN through the Parallel-O-Plate Glass in a storefront, you hardly know the glass is there.



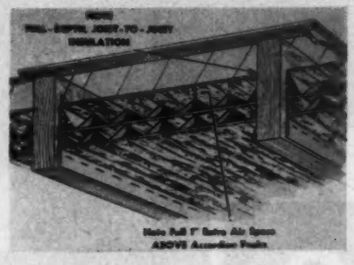
LOOKING OUT of your sliding glass doors made of Parallel-O-Plate *Thermopane*, you see the scene as it *is*.

(*Continued from page 292*)

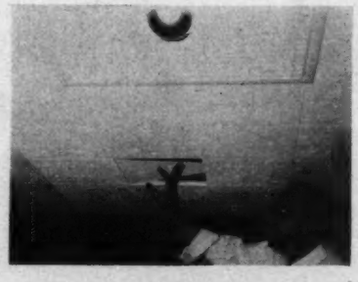
Vinyl-clad Flush Doors are available in seven colors: sage green, tile red, jonquil yellow, flame red, gray, olive green and tan. The vinyl is laminated to an aluminum backing sheet 0.025 in. thick, which in turn is backed with 1/10-in. hardboard. These skins are sandwiched around a honeycomb construction, which makes a strong, lightweight door. The aluminum faces are double-lapped and sealed at the top edge to resist moisture. Weep holes are placed at the bottom edge to equalize interior and exterior pressures and provide escape for condensate. Styrofoam is inserted in the lock-cutout area to prevent moisture infiltration at that point. *Kawneer Co., Niles, Mich.*

Fiberglas Acoustical Tile can now be applied by the *Ful-Spline* system to gypsum board ceilings as well as to wood in areas where building codes require a fire rating. Aluminum splines are inserted in the slotted edges of

Fiberglas ceiling tile and are affixed to the gypsum board by staples which are copper-lacquered for rust resistance. There is no penetration of the tile itself by the staples, as shown in the photo above. Unstapled fiber splines are inserted in the slotted edges at right angles to the aluminum splines for further leveling action. Tiles as large as 24 by 24 in. can be used. *Owens-Corning Fiberglas Corp., Toledo 1, Ohio.*



Aluminum Insulation in 3-in. extra deep multiple layers with fiber pleats and air spaces protects against heat flow by conduction, convection and radiation. In addition to 3 aluminum sheets and 2 accordion fibers which reach from joist to joist, with 6 reflective spaces including 4 inner reflective spaces, the top inner space has been increased to a full inch above the peaks of the pleats. Type 6PS Infra insulation is made for 16- and 24-in. centers. Brochure available. *Infra Insulation, Inc., 525 Broadway, New York 12, N. Y.*

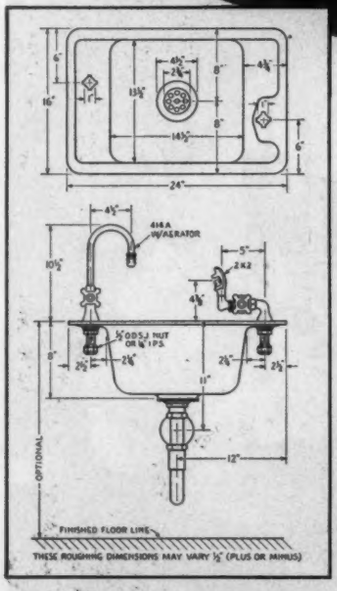


Suspended Ceilings in which steel channels and hangers are fully concealed are possible with the Accesso suspension system. Any size or make of tile and other ceiling fixtures can be used with the system. All services above the suspended ceiling can be reached through any tile or tiles in the ceiling. *Accesso Systems, Inc., 4615 8th Ave. N.W., Seattle 7, Wash.*

(*Continued on page 302*)

Haws leads with another NEW deck-type fountain

HAWS Model No. 2442
Size: 16" x 24"
Pat. applied for



...for School Classrooms

...specifically designed to meet the demand for narrow deck-type installations! The new HAWS *Series 2400* offers all the outstanding features made popular by the first deck-type fountain to be produced—the HAWS Series No. 2000... and, overall dimensions are 16 by 24 inches.

SERIES No. 2400 is cast-iron constructed with acid resisting white enamel finish... stainless steel Hudee mounting rim prevents water running onto cabinet top and provides a water-tight bond... VANDAL PROOF socket flanges and fittings... chrome plated sink strainer with non-removable grid... and availability with any combination of HAWS Sanitary Faucets and Fixtures.

Write today *for illustrated Detail Sheet on complete line of HAWS Deck-Type Drinking Fountains*

HAWS DRINKING FAUCET CO.

1443 FOURTH STREET (Since 1909) BERKELEY 10, CALIFORNIA

Boys can be boys... and no harm done

American-Olean Tile joins right in the locker room fun—and comes up sparkling. Pools of water, muddy cleats, clouds of steam, and generally boisterous behavior do it no harm. When the hubbub has died down, a fast end run with a wet mop cleans up the mess, and A-O ceramic tile is as good as new.

Ceramic tile—easy to clean, fireproof, long-lasting, and non-fading—is ideal for many school areas. Two free American-Olean booklets give you a wealth of suggestions and actual photographic examples of its use, in schools and elsewhere. Send for your copies today!

American-Olean Tile Co.

Executive Offices: Lansdale, Pennsylvania
Factories: Lansdale, Pennsylvania • Olean, New York
Member: Tile Council of America

A-O TILE ON SHOWER ROOM WALLS AND FLOOR

1. Tiled floor resists damage by the most rugged kind of foot traffic. Mud, cinders, and water whisk away easily.

2. Tiled walls need only a minimum of maintenance. Steam and constant exposure to moisture do no harm.

3. Strong disinfectants can be used as often as necessary. They cannot bleach tile's clear colors.

4. Non-porous tile discourages bacterial growth—an important health consideration in locker and shower room planning.

TILE SPECIFICATIONS: Color Plate 336. Shower Room, Frederick Douglass Stubbs School, Wilmington, Del. Victorine and Samuel Homsey, Architects. Walls: 12 Buttercup. Floors: Single Tile Check; Blue Granite and Gray Granite.

AMERICAN-OLEAN TILE COMPANY
1083 Cannon Ave., Lansdale, Pa.

Please send me the following free booklets:
☐ Booklet 600, "Tile in Schools and Hospitals".
☐ Booklet 205, "Catalog of Tile Products".

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City.....**Zone**.....**State**.....

This Aquadam Asbestos Smooth-Surface built-up roof—like its companion product, the slag- or gravel-surfaced Aquadam roof—offers the extra protection of new, high-bond-strength Aquadam.

Aquadam Built-Up Roofs

in a slag-gravel or a smooth-surface specification

(for deck inclines from dead level to ½" per foot)

Johns-Manville Aquadam built-up roofs have been specifically developed to give the best possible protection to a building. Before publicly announcing Aquadam roofs, Johns-Manville has thoroughly tested the specifications in the field over a period of years.

Aquadam built-up roofs—in slag or gravel, or smooth-surface specification—owe their superiority to Aquadam—the bituminous asphalt cementing agent developed exclusively by Johns-Manville for use in the application of the roofing felts.

Accelerated weathering tests have proved Aquadam to be nearly twice as resistant to excessive exposure as other bitumens. In standard ductility tests Aquadam proves its greater resistance to cracking, by exhibiting more than 100% greater ductility than other bitumens. In addition, Aquadam offers improved self-healing properties, stronger bond, greater resistance to water, excellent uniformity—PLUS important installation advantages such as greater kettle stability.

For information about Aquadam Built-Up roofs, see your Approved Johns-Manville Contractor. He's listed in the classified telephone directory. Or write Johns-Manville, Box 158, New York 16, N. Y. In Canada: 565 Lakeshore Road East, Port Credit, Ontario.

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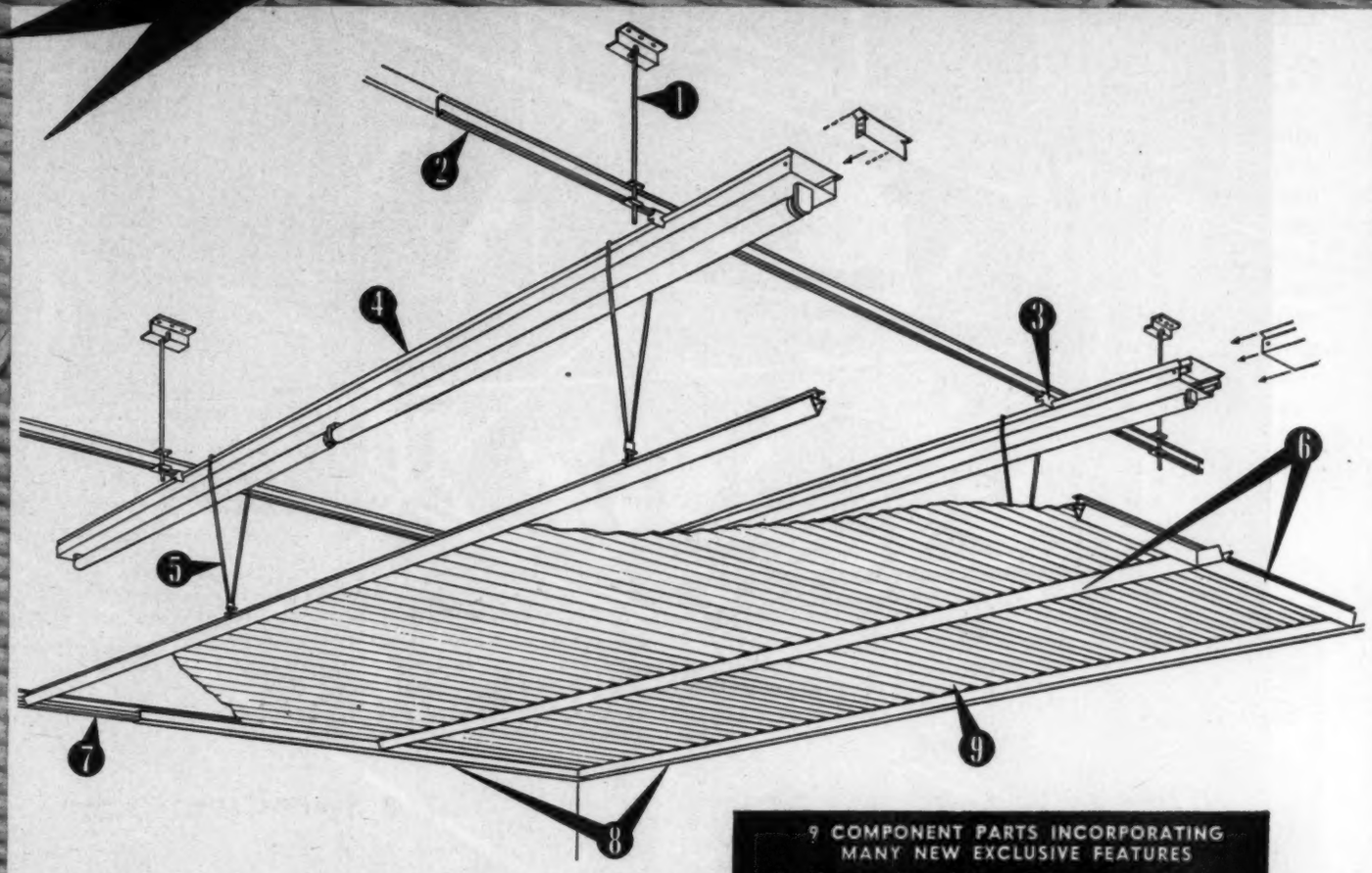
PRESENTING

smithcraft overall illumination

"TODAY'S GREATEST VALUE IN WALL-TO-WALL LIGHTING"



9 COMPONENT PARTS INCORPORATING MANY NEW EXCLUSIVE FEATURES

1. **Hanger Assembly** — Only part attached to ceiling . . . incorporates levelling means.
2. **Supporting channel** — Levelled by hand turning of bolts — no further levelling of system.
3. **Lighting Strip Hanger** — Slides over strip; locks to supporting channel. Location of strip may be adjusted in both directions.
4. **Lighting Strip** — Top quality Rapid-Start units with ETL — certified, Series — Sequence Ballasts. End caps become couplings in continuous rows.
5. **Runner Hangers** — Fit anywhere on strip; attach by slide fittings. Provide exact spacing — eliminate levelling difficulties.
6. **Framing Runners** — Pre-cut and mitered — lock firmly in place. V-shaped to pick up light and eliminate dark bands.
7. **Wall-channel** — Pre-cut to convenient length; no need for careful end-to-end fitting or close corner fitting.
8. **Snap-on molding** — Snap on to wall channel. Provide exact spacing for framing runners at wall.
9. **Corrugated Vinyl Sheets** — Lock in framing runners. Complies with National Building Code that these sheets shall not be over 10' in length.

Smithcraft Overall Illumination introduces a truly "custom-made" appearance to wall-to-wall lighting. Each of the corrugated plastic modules is contained in a mitred craftsmanlike framing providing an interesting accent pattern and relief from the monotony of an unbroken expanse of shielding. Framing runners are V-shaped to reflect light and eliminate annoying black bands. The entire system glows with softly-diffused light . . . uniform, comfortable and free from shadows.

Smithcraft Overall Illumination is simple and easy to install incorporating an exclusive new levelling feature which saves hours and dollars in installation. The system is installed in new construction or in remodelling projects regardless of the irregularities of the ceiling construction or of the room and regardless of the location of pipes, ducts, beams or other obstructions.

Smithcraft Overall Illumination (we call it S.O.I.) offers so many new appearance, lighting, installation and maintenance factors you really owe it to yourself to find out more about it.

Send now for the brand new folder illustrating and describing S.O.I.

Smithcraft

LIGHTING DIVISION

CHELSEA 50, MASSACHUSETTS

America's finest fluorescent lighting systems

Keep your clients' employees

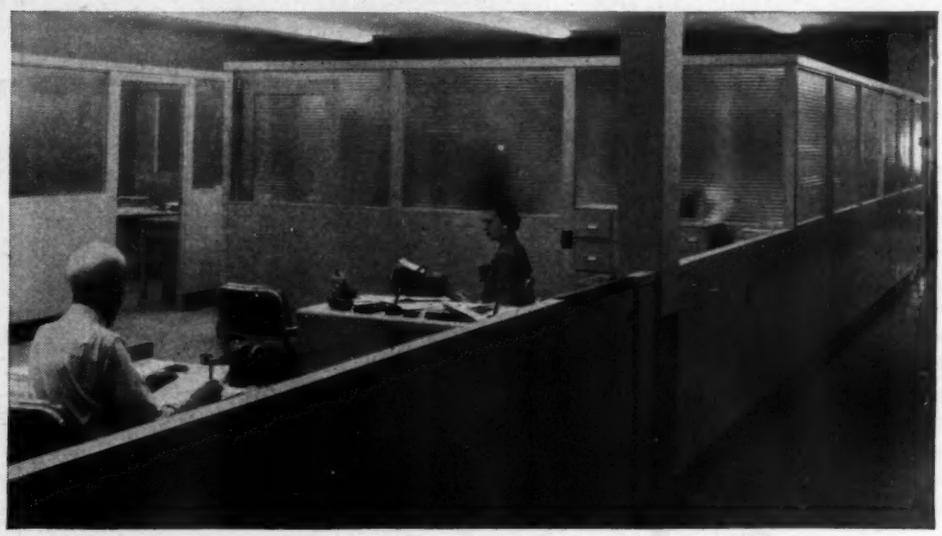
es free from "Jungle Jangle!"

Step up the efficiency of offices you plan with metal, movable VMP MOBILWALLS

Don't let noise, confusion, and unchanneled traffic take their toll in the productivity of offices you plan. Eliminate "Jungle Gym" distractions right from the start by including VMP MOBILWALLS in your blueprints.

Smartly styled, easily installed VMP MOBILWALLS partition offices into livable working areas, give your clients' employees productive privacy—increase work output as much as 30%, according to recent *ratio-delay studies.** You can simplify many of your design problems with VMP MOBILWALLS. Because they're much lighter than plaster and tile walls, they permit the use of lighter, less costly supporting members in new construction. You can provide for heavier electrical requirements with MOBILWALLS because wiring raceways are built in and easily accessible. Metal VMP MOBILWALLS far surpass tile and plaster walls in thermal insulating properties and sound attenuation characteristics.

**Ratio-delay studies* accurately rate office efficiency before and after installation of VMP MOBILWALLS. Typical studies are available on request.



PRODUCTIVE PRIVACY is provided by VMP MOBILWALLS in any office or plant. They can be moved easily anywhere, any time, to suit floor plan changes. Surfaces never chip, warp, or crack—wash clean with soap and water. Colors are scientifically selected to produce a pleasant working atmosphere.

SPEEDY INSTALLATION by skilled crews, working out of nearby warehouses, saves your time and your clients' money. VMP sales representatives and factory engineers work with you, help you design more productivity and livability into offices.

Better check into VMP MOBILWALLS today. Write to Dept. AR10 for complete, illustrated literature.

Virginia Metal Products, inc.

ORANGE, VIRGINIA

Subsidiary of Chesapeake Industries, Inc.

Long Beach Calif. High School; Hugh R. Davies, Architect; Smith-Campbell Co., Contractor.

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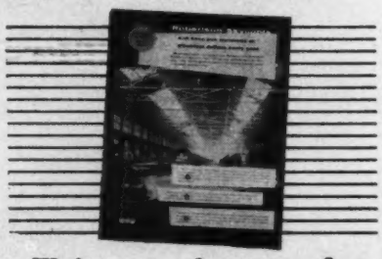
As one of the world's leading manufacturers of maintenance-free skylights and sash, H. H. Robertson Company is prepared to offer you professional Daylight Engineering Service without obligation. Here's how it works. Upon request, Robertson engineers will look over your drawings and obtain from you a description of the work performed within your building. Robertson engineers will then establish a foot-candle light intensity curve for a skylight and sash design that will be the best combination of economy, practicality and efficiency. A report will be made available to you, including details and specifications to cover recommendations. You can then proceed with the daylighting project or not, as you see fit.



Write now for your free copy of Robertson's new comparative cost study which shows you how to pay for your skylights within a few years from artificial light savings. Use the coupon below.

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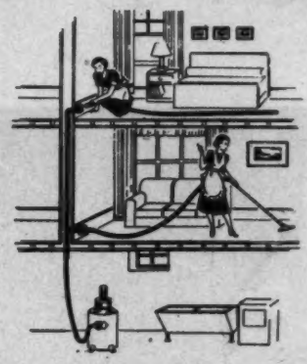
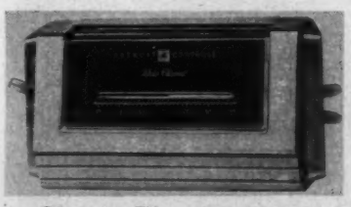
AE PRODUCTS

(Continued from page 296)



Built-in Vacuum Cleaning System for homes makes use of a hose which stretches to five times its own length. The cleaner itself is installed in the basement, and baseboard outlets, each with its own switch, are located where they are most convenient. The manufacturer claims that the cost of the new system is little more than conventional cleaners. *Precise Mfg. Co., Inc., 2561 So. 67th St., Philadelphia 42, Pa.*

Built-in Bathroom Rack has magazine rack and paper holder recesses and shelves for room deodorant, ash tray and cigarettes. Made of die-formed steel, finished in silvertone baked enamel, the unit is trimmed with chrome. It is 14 in. wide by 20 in. high. *Jensen Industries, 159 So. Anderson St., Los Angeles 33, Calif.*



Duo-Classic Thermostat controls heating, cooling and air circulation by a single switch. The manufacturer claims that the thermostat will hold the selected temperature to within a fraction of a degree. The unit is housed in a satin-gold case with a black dial. *Detroit Controls Corp., Detroit, Mich.*

(Continued on page 306)

THE NEW BEAUTY OF CONCRETE MASONRY

Over FIVE MILLION 8-inch (or equivalent) Vibrapac Block units were used in New York's modern Riverton Apartments (Starrett Bros. & Eken, Inc., builders). No multiple dwelling structure is too big . . . no single home too small . . . to enjoy the incomparable benefits of Vibrapac Block.

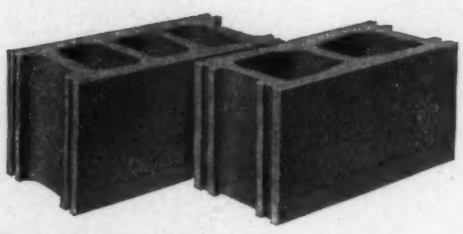
Many more modern housing-units to cost less by using *permanently beautiful* concrete masonry!

Economy alone would not account for the marked trend toward Vibrapac Block. Added to many other advantages, however, the economy factor carries a lot of weight with everyone aiming at good building practice. True structural economy involves not only *initial cost* but also years of *minimum maintenance costs.* The "bonuses" of concrete masonry are many! ★

"What profiteth a man to build his house upon the sands" of economy, only to face excessive maintenance-costs later? Security against deterioration is all-important.

Since most men have to work the better part of their lifetime to acquire modern shelter, it's very vital to build for *permanent* beauty and decades of comfortable convenience. Modern concrete masonry provides many of the answers to problems of long-service shelter.

Whether plans call for a single family home, or a multiple dwelling structure, concrete masonry is practical.



★ High quality Vibrapac Block for both exteriors and interiors . . . pleasing color tones and textures . . . "built-in" insulation advantages . . . sound-absorbing qualities . . . permanent protection from termites and rodents and from damp-rot or deterioration by weather . . . these are some of the many practical Vibrapac block "bonuses".

Initial cost of Vibrapac Block construction is low. Upkeep stays at a low minimum. Architectural beauty is longer-lived. Dollar-wise, security-wise, comfort-wise, it's best to build with Vibrapac Block . . . for both exteriors and interiors.

Permanent beauty at low cost!

Less time required for erection . . . reasonable initial cost . . . modular sizes that "make everything fit," thus simplifying installation of door and window jambs and equipment . . . varieties of color impregnations and textures in Vibrapac Block itself . . . and other unique advantages . . . all add up to "more for the money" in modern housing and other structures. Helpful booklet gladly sent on request. BESSER COMPANY, Box 173, Alpena, Michigan, U. S. A.

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New savings and loan building utilizes

. . . to heighten

. . . accent its modernism

Bordering the picturesque harbor in Newport Beach, California, the Newport Balboa Savings and Loan Association is an outstanding example of progressive modernism in businesses of this kind. Its harbor setting called for broad expanses of Pittsburgh's Solex® Heat-Absorbing Glass, thus opening the building to its scenic surroundings and, at the same time, offering to the occupants all the comfort that is provided by this heat- and glare-reducing green-tinted glass. Architects: Bank Building and Equipment Corporation of America, St. Louis, Mo.

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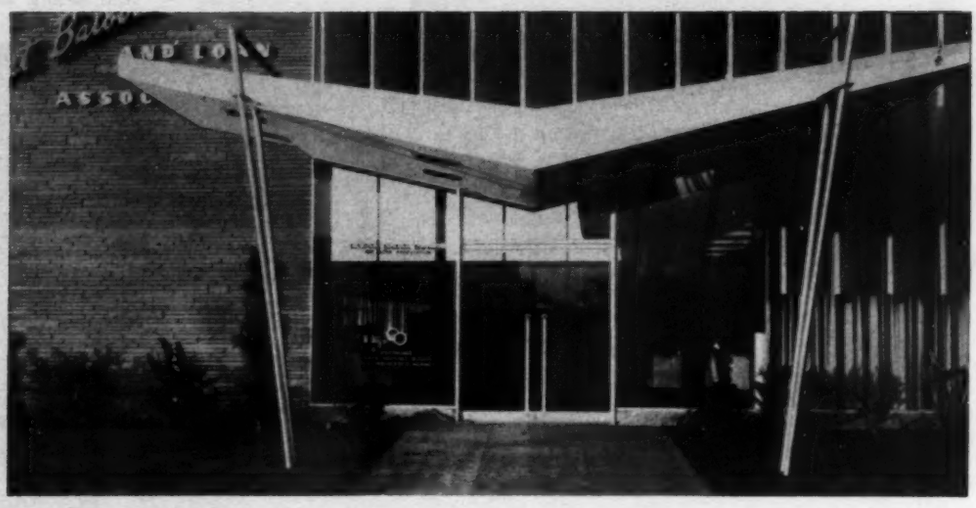
PITTSBURGH materials

its architectural appeal

. . . bring it practical advantages



Pittsburgh's Pittcomatic® . . . "the nation's finest automatic door opener" . . . operates the Herculite® Doors at the entrance to the building, as well as on the side entrances. With the Pittcomatic Hinge, doors open automatically—at the lightest touch and with complete safety.

Here is a view of the employees' cafeteria, located on the second floor of the building, facing the harbor. This entire west wall is glazed with Solex, which makes it possible to take full advantage of the natural beauty of the outdoors while keeping room interiors cooler and glare at a minimum.

Your Sweet's Architectural File contains detailed information on all Pittsburgh Plate Glass Company products . . . Sections 6a, 15d, 20, 12e, 15a.

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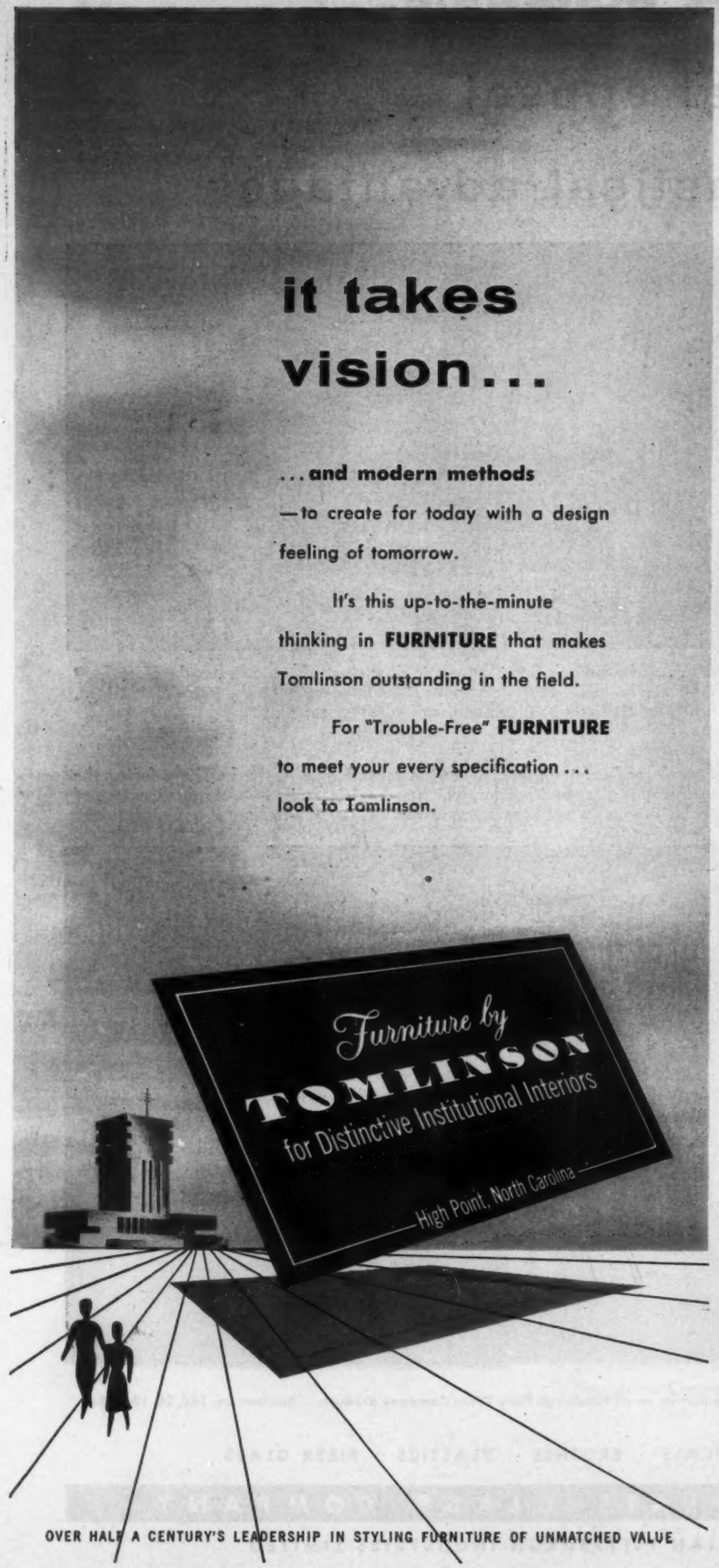
PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

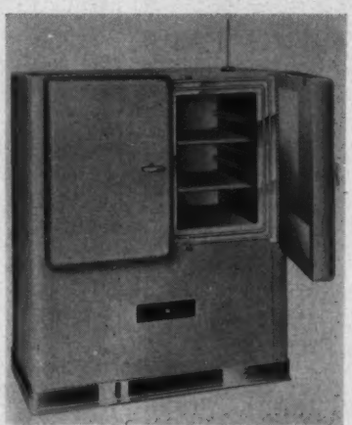


AE PRODUCTS

(*Continued from page 302*)

Masonry Paint. *Enterprise* breather-type, vinyl latex, water-repellent paint decorates and protects from weathering such surfaces as exterior stucco, cement, brick, cinder block, asbestos shingles and siding and also interior basement walls. It is water-thinned and self-cleaning because of its chalk properties. It will dry in about 4 hr. *Enterprise Paint Mfg. Co., 2841 So. Ashland Ave., Chicago 8, Ill.*

Power Exhauster for all types of industrial plants blows exhaust air up and away from the roof, thus minimizing the harmful effects of fumes on roof surfaces. The fan is connected directly to the motor. Four models are available. *Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.*



Laboratory Ovens. *Force-Aire Bench-Saver Ovens* are available in three sizes. The one shown above is 37 in. wide by 25 in. high by 19 in. deep. Temperatures up to 270 C (520 F) can be reached. Special plenum chamber construction ensures uniform circulation of air throughout interior. Other ovens are the radiant wall ovens and the *Thermo-Circulator* ovens. *Labline, Inc., 3070–82 W. Grand Ave., Chicago 22.*

(*Continued on page 310*)

Oak Plywood Paneling—The Cenacle Convent, Boston, Mass.

time honored yet timeless...

Versatile Birch Plywood forms interesting block panels on walls. Maple Plywood is readily curved to make these attractive seats in Washington School—W. F. McCaughey & Associates, Park Ridge, Illinois—Architects

hpi HARDWOOD PLYWOOD

Schools and churches pose this architectural problem...once built, they must function with minimum architectural or decorative changes for years. The timeless loveliness of Hardwood Plywood wears well—in more ways than one:

- Grain in panels can be matched without risking the repetitious monotony of printed photographic substitutes.
- Unlike paper-thin surfaces, Hardwood Plywood offers a *depth* of beauty which means that scratches and mars are easily repaired —that maintenance is held to a minimum.
- Hardwood Plywood has superior acoustic qualities—an important consideration in churches and schools.
- Hardwood Plywood is a practical building material. It's reasonable in cost, easy to work with, easy to install, and available everywhere.

ACHIEVE DISTINCTIVE, INDIVIDUALISTIC EFFECTS

Where beauty and function are equally important goals, Hardwood Plywood fulfills the situation as nothing else can. The natural beauty combined with the unparalleled strength, stability and durability makes it a truly outstanding design medium. It's available in lovely birch, gum, mahogany, maple, oak, walnut and other popular species.

THIS FREE LITERATURE SHOULD BE IN YOUR FILE

HARDWOOD PLYWOOD INSTITUTE, DEPT. 25-J
600 S. Michigan Avenue • Chicago 5, Illinois

Gentlemen, please send me the following literature:

☐ "A Treasury of Hardwood Plywood." A color booklet showing the selection and use of Hardwood Plywood.

☐ Technical information on the strength properties of various species of Hardwood Plywood.

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HARDWOOD PLYWOOD
Genuine Wood, Fabricated in America

The HPI seal identifies American mills operating under a rigid 5-point quality control program. It's your assurance of getting consistent quality, uniform grading from coast to coast...the backing of a national ad campaign that's building consumer acceptance everywhere.

HARDWOOD PLYWOOD INSTITUTE
600 South Michigan Avenue • Chicago 5, Illinois

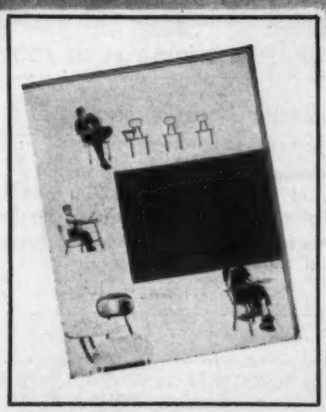
Samsonite presents a totally new

Totally new in Color, Comfort and Line...

✱ 4 BRILLIANT NEW COLORS...Terra Cotta! Turquoise! Brown! Grey!
✱ NEW COMFORT-CONTOUR DESIGN heightens student attention!
✱ NEW BEAUTY AND DURABILITY with Hard Wood or Plastic work surfaces!

The Mobile Samsonite *Open Front Desk* gives maximum storage space! Forms related unit with matching Pivot-Back chair.

New Samsonite *Pivot-Back Chair* has silent, rubber-cushioned glides, kick-proof "spats". Pivot-back swivels *silently*, adjusts to individual body contours.



NEW CATALOGUE

New Samsonite Classroom Furniture Catalogue. Complete specifications on new Samsonite Classroom Furniture. Fully illustrated in color. Write Shwayder Bros., Dept. P-11, Classroom Furniture Division, Detroit 29, Mich. for a copy and for the name of your nearest distributor.

Makers of the famous Samsonite

Samsonite

concept in Classroom Furniture

actually aids the Educative Process!

Samsonite has created an entirely new concept in Classroom furniture...as exciting as it is practical.

4 Paint-Box Colors make classrooms bright and fun to work in! Tested on school officials in 30 states, the colors mix or match harmoniously, blend with every wall color!

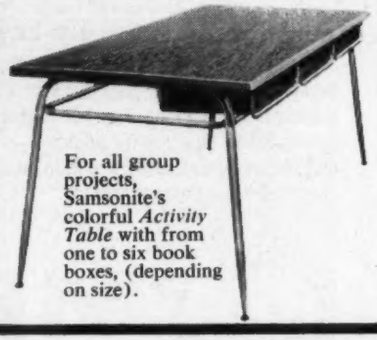
Shaped for Tomorrow! The gracefully curved contours are posture-designed to build healthy bodies, make attention less tiring, learning more fun!

Miracle of Mobility! Mix these units, move them room to room, with never a conflict in color or contour.

Mischief-Proof! Aluminum "spats" on legs defy kick and mop marks! Desk-lid hinges and countersunk "bumpers" can't be loosened, even with a screwdriver!

It's Not Expensive! Samsonite actually costs *less* than old-fashioned furniture... because it's strongest, lasts longest!

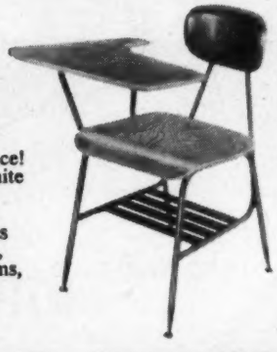
A new note in schoolroom furniture, Samsonite's *Round Table* lends an informal, non-institutional look to the classroom!



For all group projects, Samsonite's colorful *Activity Table* with from one to six book boxes, (depending on size).

Samsonite's colorful *Lift-Lid Desk* is noiseless, slam-proof, tamper-proof. Fingers can't be caught between lid and book box.

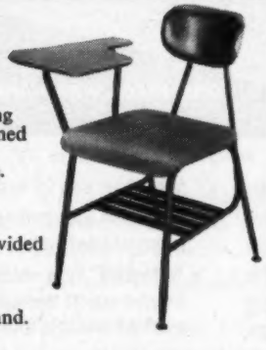
Newness of line, brilliance of color, keynote Samsonite's *Teacher's Desk.* Maximum work and storage space! (Available in either single or double pedestal styles.)



290 square inches of writing surface! New Samsonite *Tablet Desk Chair* plays multiple roles in classroom, meeting rooms, lunchroom.

Samsonite *Student Desk* can also serve as table. Several can be pushed together for group projects.

New Samsonite *Trapezoid Table* adapts in groups to endless combinations for varied schoolroom activities.



Tablet-Arm Chair with generous writing surface positioned for natural writing posture. Sturdy tubular steel supports. Easy slide-in, slide-out is provided by lines and curve of tablet arm. Right or left hand.

Plenty of leg room and storage space! The Samsonite *Shelf Desk* brings modern color, graceful lines to the classroom.

folding tables and chairs for every institutional use!

...the Classroom Furniture that's **STRONGEST...LASTS LONGEST!**

*Design and structural patents pending

SHWAYDER BROS., INC., CLASSROOM FURNITURE DIVISION, DEPT. P-11, DETROIT 29, MICH. Also makers of famous Samsonite Luggage and Card Tables and Chairs for the Home.

ANOTHER ELECTRO SILV-A-KING ACHIEVEMENT!

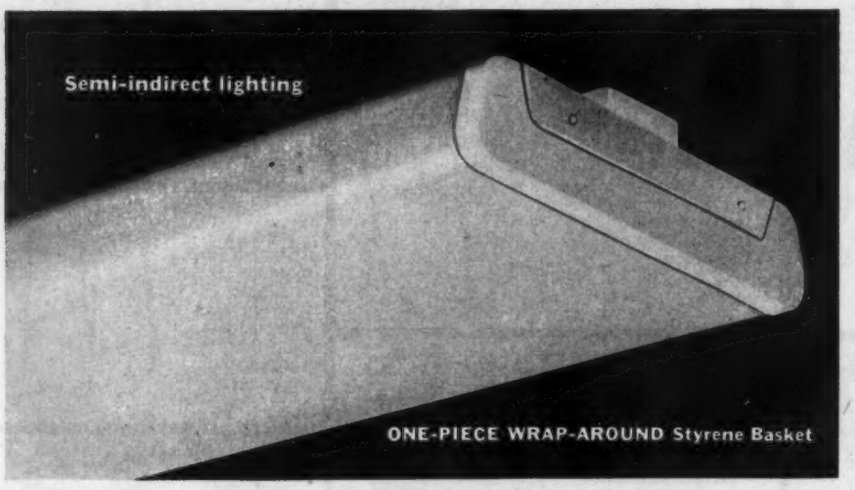
NOW BETTER LIGHTING AT EVERY LEVEL!

BETTER AT THE CEILING LEVEL
Skylume delivers an optimum 75% uplight to minimize typical high contrast areas on the ceiling. The overall ceiling lighting achieved by this semi-indirect fixture adds to the attractiveness and comfort of the entire installation.

BETTER AT THE FIXTURE LEVEL
Skylume is designed for pendant mounting and offers an exclusive one-piece, exceptionally shallow, wrap-around styrene basket. This trim, neat, smooth-line styling is extremely pleasing to the eye and gives a distinctive appearance to any interior.

BETTER AT THE WORKING LEVEL
Skylume provides 75% Uplight and 25% Downlight to achieve an unusually low brightness contrast ratio. Even with higher lighting levels, this properly diffused illumination eliminates glare so as to provide exceptionally comfortable lighting.

SKYLUME



SKYLUME IS AVAILABLE IN:
Rapid Start and Slimline (Standard also available) 2 ft.-4 ft.-8 ft.—2 lamp, 3 lamp, 4 lamp.

- Styrene with 15% transmission factor is standard. Plexiglass also available . . . as well as enclosures with higher transmission factors for surface mounting. All open from either side for easier maintenance.
- All models have continuous wireways for interconnected units.
- "Lite-Gard" Fuse which isolates individual fixtures against thermal and electrical overload available with all models.

Write for the name of the Electro Silv-A-King district manager near you . . . and new Specification Data Catalog.

Electro Silv-A-King Corporation
1535 South Paulina Street, Chicago 8, Illinois
Spruce & Water Sts., Reading, Pennsylvania

DESIGNERS AND MANUFACTURERS OF THE FINEST IN LIGHTING

AE PRODUCTS

(*Continued from page 306*)

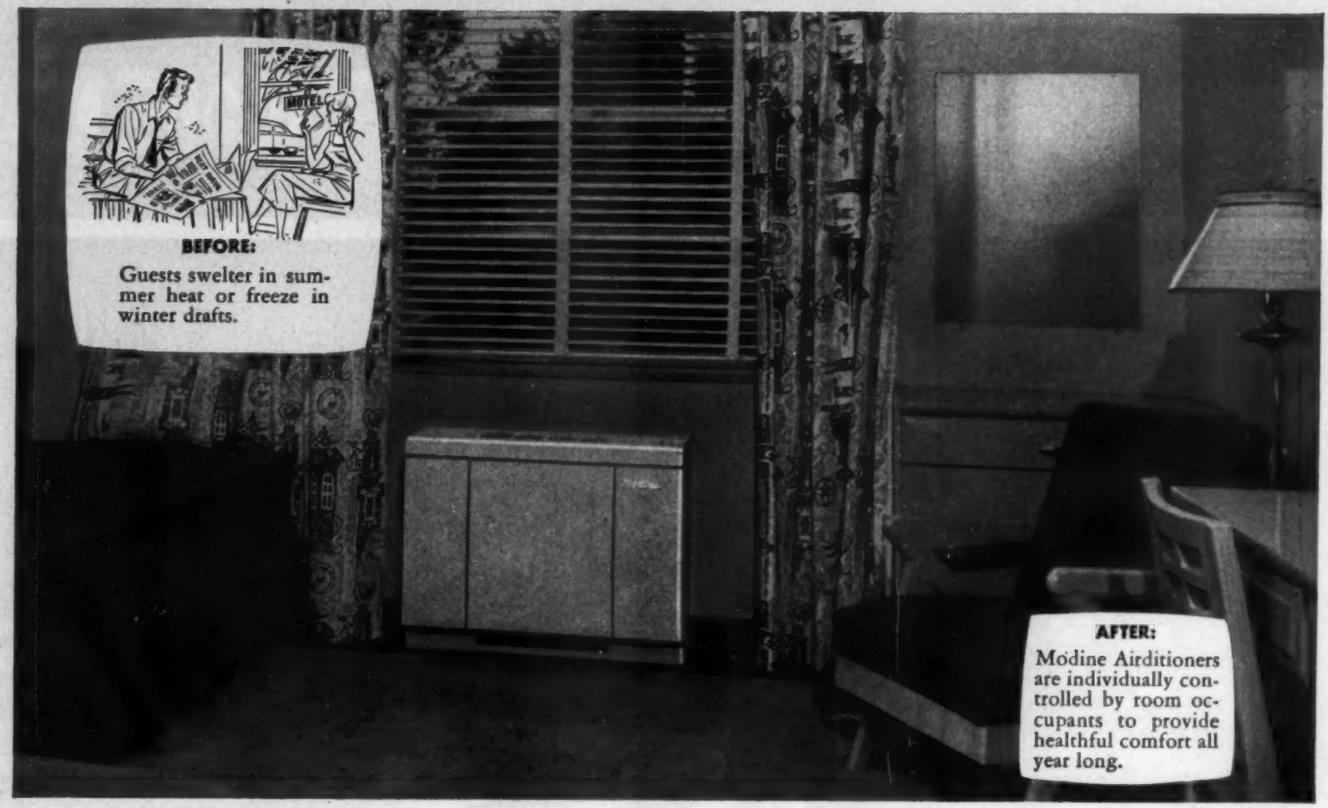
Industrial Gas Burners are being offered in a new line priced, according to the manufacturer, 30 to 40 per cent lower than previous models. The lower prices apply to six new gas and gas/oil burners. Capacities range from 720,000 to 8,600,000 Btu. *Cleaver-Brooks, Burner Div., 326 E. Keefe Ave., Milwaukee 12, Wis.*

House-connection Pipe. *Speed-Seal* factory-made, mechanical-joint pipe is vitrified clay pipe with molded plaster spigot and natural rubber gaskets, to provide a permanently tight, permanently flexible house-connection line. The manufacturer claims that a 50-ft line can be installed in 8 to 10 min by a two-man crew without special tools. The inside surface of the bells and the gaskets is brush-coated with lubricant, and the two parts are shoved together. There is no wait for the joint to set. *Gladding, McBean & Co., Pipe Products Div., 2901 Los Feliz Blvd., Los Angeles 39, Calif.*

Marble Toilet Compartment. *Stall-pack* is a standardized compartment, produced to stock and packaged. It includes a polished Ozark Grey Veined marble partition, a solid-core, natural-finish birch door and a set of chrome-plated hardware. The manufacturer claims that assembly-line methods have cut costs far below custom-finish installations. *Carthage Marble Corp., Carthage, Mo.*

(*Continued on page 314*)

Air conditioning existing buildings may be easier than you think...


BEFORE:
Guests swelter in summer heat or freeze in winter drafts.
AFTER:
Modine Airditioners are individually controlled by room occupants to provide healthful comfort all year long.

It's as simple as this, with Modine Airditioners*

1. Individual units replace radiators in each room to be air conditioned. Hot water from your present boiler is piped to each unit for heating. Cold water from a central chiller is supplied through the same piping for summer cooling. A small motor (1/30 to 1/12 hp) operates two quiet fans in each AIRditioner to provide refreshingly cooled or heated air circulation. There are no expensive ducts to install. Here is low-cost, year-round comfort for new or existing office and apartment buildings, hotels or motels, hospitals or homes.

2. Operating flexibility cuts costs. With Modine AIRditioners, room occupants control their own temperatures. Units are operated only when and where they are needed. No need to air condition an entire building to provide comfort only in occupied rooms.

3. Types and sizes for every application. AIRditioners are offered in console (illustrated), concealed, built-in overhead and exposed ceiling models . . . in sizes to meet your remodeling or new construction requirements. All units are furnished with quiet, slow-speed motors (1050 rpm top speed) having built-in thermal overload protection as a standard safety feature.

*Trademark

Want to know more?

Consult the classified section of the phone book for your Modine representative. Contact him or mail the handy coupon for illustrated booklet.

MODINE MFG. CO.
1510 DeKoven Avenue, Racine, Wisconsin

Gentlemen: Please send me a free copy of Bulletin 745-D, describing Modine AIRditioners.

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Firm .....

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"We Saved Almost REINFORCED

Fontainebleau Hotel
Miami Beach, Florida

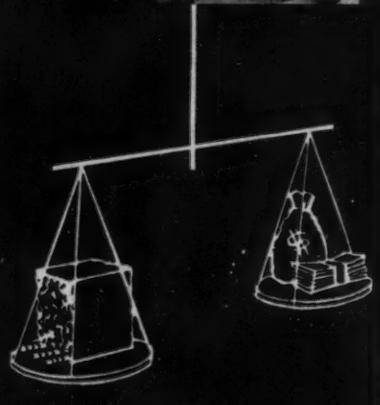
Morris Lapidus, Architect
Miami Beach, Florida

Oboler & Clarke, Structural Engineers
Miami Beach, Florida

Taylor Construction Company
General Contractor
Miami Beach, Florida

Compare . . .

YOU'LL SAVE WITH REINFORCED CONCRETE



Six Months with CONCRETE"—

—says Mr. M. Lapidus, architect for the magnificent Fontainebleau Resort Hotel in Miami Beach, Florida, and added:

- ". . . it was possible to start erection . . . as soon as plans were sufficiently advanced . . ."
- ". . . reinforced concrete also gave us elegance, lightness, and grace throughout the entire complex structure . . ."
- ". . . lower budget estimates with reinforced concrete throughout"
- ". . . concrete and reinforcing steel were immediately available . . . there was never a question of delivery of any special framing and materials . . ."
- ". . . reinforced concrete proved to be the most flexible medium"

There are many reasons why an architect chooses reinforced concrete. But none is more important than those that mean *savings in time.* In the case of the Fontainebleau Hotel, reinforced concrete permitted construction to begin before the structural drawings were finished. The months saved with reinforced concrete resulted in earlier occupancy, providing extra rental income that could amount to many thousands of dollars. Furthermore, reinforced concrete offered a lower over-all cost, rugged strength, rigidity, and flexibility of design found in no other method of construction. On your next job . . . design for reinforced concrete!

CONCRETE REINFORCING STEEL INSTITUTE 38 S. Dearborn St., Chicago 3, Ill.

MEMO

TO: SPEC. Writers

SUBJECT: Interior Fire-Protection

Don't let the traditional stability of this field fool you. Current catalogs and supplement to A.I.A. file 29e2 show several new developments by Allenco.

Job supervisors report Allenco reliable delivery and faster-installation speed work. Also, clients are becoming more familiar with this field.

Suggest you check with local Allenco office or send for current ads.

Allenco Fire Line Hose Unit

Allenco Siamese Fire Department Connection

Allenco Fire Line Fog Nozzle

Allenco Improved, Welded Linen Hose Rack

ALLENCO

Established 1887

W. D. ALLEN MANUFACTURING CO.

700 Allenco Bldg. 566 West Lake Street Chicago 6

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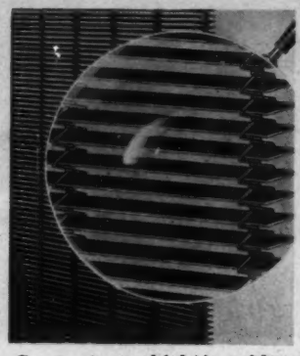
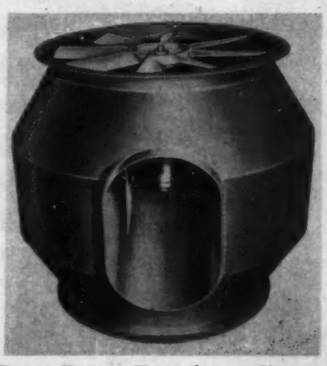
A|E PRODUCTS

(Continued from page 310)



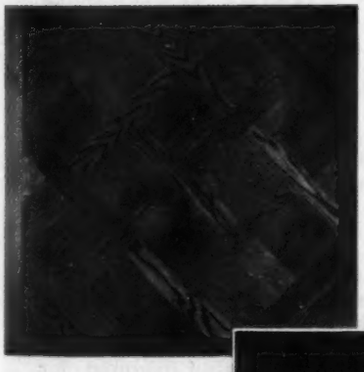
Solar Screening which is said to provide up to 50 per cent greater glare-shading efficiency than ever before attainable is known as *LSA KoolShade Sunscreen.* Installed flush to the outside of a classroom window, it consists of thousands of tiny tilted louvers, spaced 23 to the vertical inch, at an eclipse angle of 24 deg. This angle was selected by daylight authorities as ideal for maintaining proper illumination levels and ensuring brightness balance throughout the year. It is also optimum for keeping out the maximum amount of solar heat. *Reflectal Corp., 310 So. Michigan Ave., Chicago 4, Ill.*



Bi-Pass Duct Fan is a direct-connected fan with motor mounted in a tunnel completely out of the air stream. It is useful for high-temperature jobs such as ovens and oil- and gas-fired, induced-draft boilers and for moving corrosive fumes. Model HN will operate satisfactorily to 300 F, provided the motor tunnel is in ambient temperatures not over 95 F. Model HXN has a temperature limit of 450 F, but it can be extended with optional equipment to 550 F. The fan is available in diameters of 25, 29 and 37 in. *Hartzell Propeller Fan Co., Piqua, Ohio.*

Correction. *Varna-Plate Varnish,* described on page 216 of the July 1955 AR, is manufactured by the *Varna Chemical Co., 715 Union Commerce Bldg., Cleveland, Ohio.*

MONTICELLO PATTERN—This famous pattern was created for the flooring of Thomas Jefferson's beloved Monticello . . . the Old Dominion Mansion which our Third President both planned and built in historic Virginia.



FONTAINEBLEAU PATTERN — Fontainebleau is a faithful reproduction of the floor pattern that enhances the famed Fontainebleau Palace, birthplace of kings.

MARIE ANTOINETTE PATTERN—An authentic reproduction of the eloquent flooring that graces many a French Chateaux and Palace.

American flooring masterpieces for today's distinctive homes

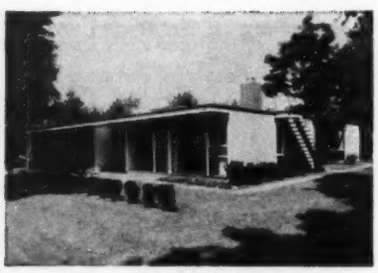
Where your flooring selection is dictated by good taste alone . . . where the home you plan must stand out from its neighbors . . . you'll find that Wood-Mosaic Parquetry Floors in rich and rare hardwoods will add far more to the value of the home than their modest cost.

And the modern trend is to show these rich and warm hardwood floors in all their elegance. There are many exquisite patterns in a variety of woods. Write today for our full catalogue.

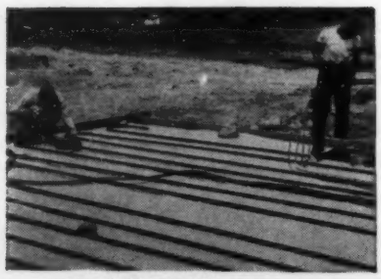
WOOD-MOSAIC CORPORATION

PARKAY, Inc. Division • LOUISVILLE 9, KENTUCKY

Every inch of Floor and Wall Space is usable . . .



A typical radiant heated suburban development home.



Typical installation of steel pipe radiant heating coils on slab.

with "invisible" radiant panel heating

As the song says, "little things mean a lot" . . . to a woman.

She chooses an automobile by its color, selects a television set for its cabinet . . . and may insist on a radiant panel heating system solely because it gives her *complete* freedom of decoration in her home. The *only* heating system that does, because every inch of floor and wall space remains *usable*. Why should a mere man object to her whims as long as there's horsepower under the hood, a clear picture from the T.V. set, and the heating system gives clean, healthful, draft-free comfort!

It *is* a fact that *women* have helped make radiant panel heating increasingly popular for individual homes, multiple dwellings and housing developments . . . up significantly last year among wet heat installations.

And, as in other wet heat systems, the *men* who design, specify and install, know that reliable steel pipe is first choice for heat transmission. Time tested through more than 60 years of hot water and steam applications, it also has the qualities of economy, durability, weldability and formability required for successful "invisible" radiant panel heating. In fact it's the most widely used pipe in the world!

Write for the free 48 page color booklet "Radiant Panel Heating with Steel Pipe" and 32 page companion booklet "Steel Pipe Snow Melting and Ice Removal Systems."

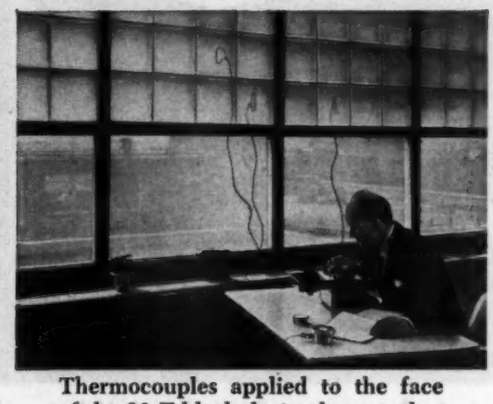
Steel Pipe is First Choice

Committee on
STEEL PIPE RESEARCH
AMERICAN IRON AND STEEL INSTITUTE
350 FIFTH AVENUE, NEW YORK 1, N.Y.

Owens-Illinois' NEW SOLAR SELECTING Glass Block cooler in hot weather

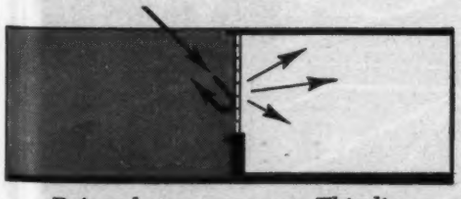
Owens-Illinois new solar selecting Glass Block No. 80-F has a lower surface temperature during hot weather. It acts like a mirror reflecting a good portion of the direct hot rays from the sun, and at the same time transmits cool light reflected from the ground.

Because of its light-selecting principles this new block has a much lower surface brightness than other glass block. Maximum surface brightness as measured at the Daylighting Laboratory is less than 1400 foot-lamberts.

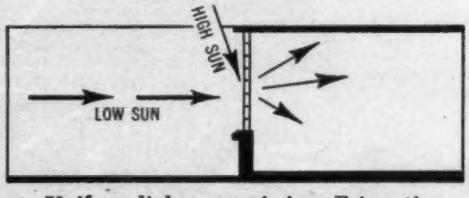


Thermocouples applied to the face of the 80-F block during hot weather (outside temperature 90°) showed that the roomside surface temperature was 14 degrees less than a conventional type light-directing block.

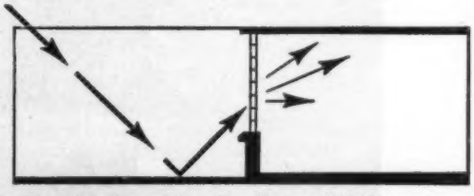
A similar test using a portable pyrometer confirmed the findings of the test using thermocouples by showing the same 14 degrees lower temperature on the roomside surface of the 80-F glass block.



Rejects hot summer sun—This diagram shows how the 80-F block reflects a major portion of the light from the sun at the critical 45° angle thus reducing brightness and solar heat transmission during hot weather.



Uniform light transmission—Prismatic design is selective and controls the amount of light transmitted from the various sun positions, thereby providing more uniform light transmission all day long.



Transmits ground-reflected light—This diagram shows how the 80-F transmits the cool light reflected from the ground. This feature is especially important when the sun is not on the fenestration.

Complete information available

Send for the free, technical bulletin that gives the details. Just write "No. 480F" on your letterhead and mail to Kimble Glass Company, subsidiary of Owens-Illinois, Dept. AR-10, Box 1035, Toledo 1, Ohio.

OWENS-ILLINOIS GLASS BLOCK
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

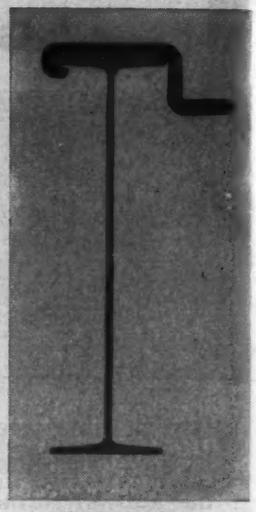
NEW YORK ENGINEER DEVELOPS NEW SYSTEM FOR FORMING FLOORS

A New York 12-story structure seldom makes news, but the $1,200,000 apartment building shown below is an exception. Its design incorporates a new method of forming floors which substantially reduces the over-all building costs.

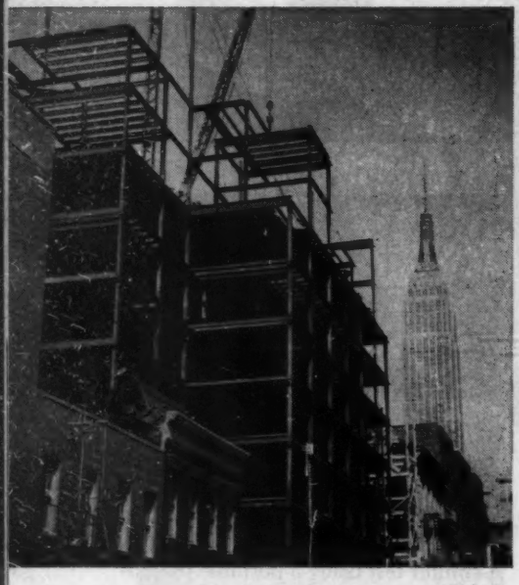
Developed by veteran consulting engineer, E. S. Klausner, the "K" system uses J&L Junior Beam construction to get low-cost, fast steel erection, and a small cast iron clip that speeds the laying and stripping of concrete forms.

Once the Junior Beams are framed into the main structural members, "K" clips are placed along the top flange of the beams. Next, 2x8′ sheets of plywood are placed between the beams so that they rest on the clips and serve as ready-made forms for the concrete.

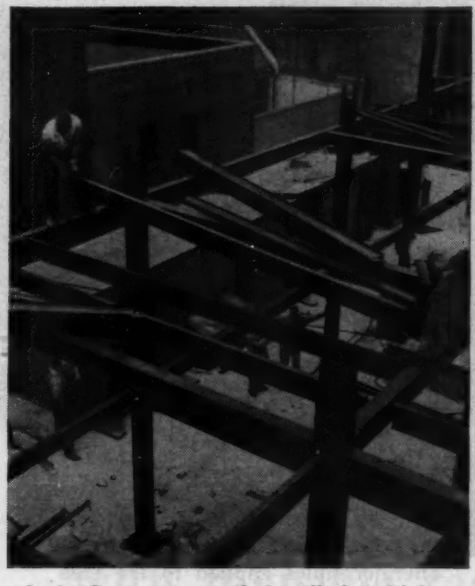
The design of the clip allows the concrete to extend ¼″ below the top flange of the beam, thus bracing the top flange of the Junior Beams along their entire length. This provides greater rigidity and eliminates the need for bridging. Finally, the forms are stripped simply by breaking off the exposed "tail" of the clip and allowing the forms to drop.



J&L Junior Beam and the "K" clip



New 12-story apartment at 236 E. 35th Street in which the "K" system for forming floors was specified. Architects are Maxon, Sells and Ficke of New York.



Junior Beams are easily handled. As 16-foot length of 8-inch section weighs only 100 pounds, two men can position and bolt in a beam without tying up crane or derrick.

Hooking "K" clip over the flange of a Junior Beam to hold the 2′ x 8′ x ⅝″ plywood sheet used as concrete forms. Clips are placed every 2½ feet along the beam.

Junior Beam floor joists are framed into the main members of the structure on approximately 26″ centers. "K" clips can be seen in position hooked over the upper flange of the beams.

Ease of laying forms is demonstrated by workman. One carpenter and three laborers were able to place forms at the rate of 6-7,000 square feet a day.

Stripping forms. Light blow fractures exposed "tail" of cast iron clips, allowing forms to drop. The "K" clip will withstand a dead load of 1,000 pounds but fractures readily under impact.

Light tug removes forms. Two men strip 6-7,000 square feet a day. Forms can be easily stacked and re-used 20 or more times.

Bracing is eliminated. Upper flange of Junior Beam is encased in the floor slab and supported along its entire length.

Floor Forming Method Geared for Speed and Economy

The Junior Beams were economically fabricated by simply welding a pre-punched end plate to the web of the beam.

On the job, Junior Beams helped speed erection. Whitey Sapilla, Superintendent of the erection crew reported, "these J&L Junior Beams handle easily . . . sorting the steel is no problem. We raise the beams in bundles and two men can distribute and position them without tying up a crane or derrick."

Use of "K" clip makes laying and stripping the concrete forms a simple matter. One carpenter and three laborers were required, yet forms were going in at the rate of 6-7,000 square feet a day. Two men could strip 6-7,000 square feet in a day . . . and forms were re-used more than 20 times.

J&L STEEL

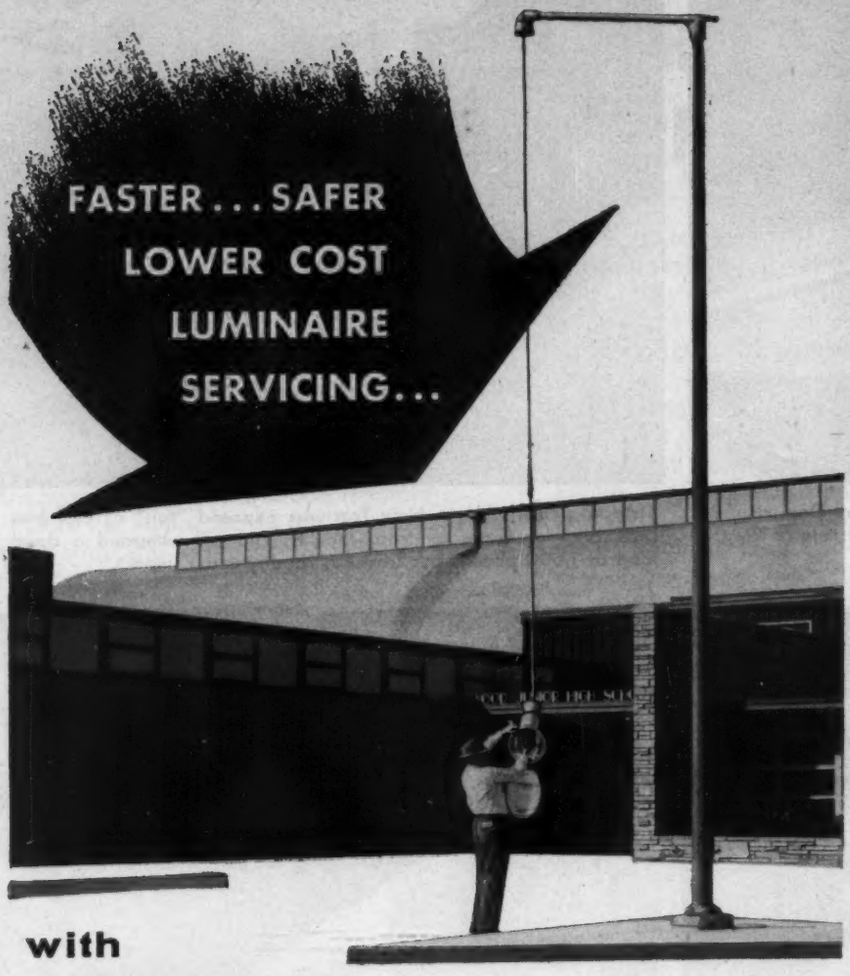
The "K" system is an outstanding example of sound engineering employing the strength and adaptability of lightweight Junior Beams to materially reduce construction costs. Write today for complete information showing how Junior Beams are used as floor joists, and roof purlins with loading and spacing tables for various spans. The coupon is for your convenience.

Jones & Laughlin
STEEL CORPORATION — *Pittsburgh*

Jones & Laughlin Steel Corporation
466 Gateway Center
Pittsburgh 30, Pa.
Please send me your Junior Beam Booklet

see our catalog in
ARCHITECTURAL FILE
or write for copy

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE_____ STATE_____



with

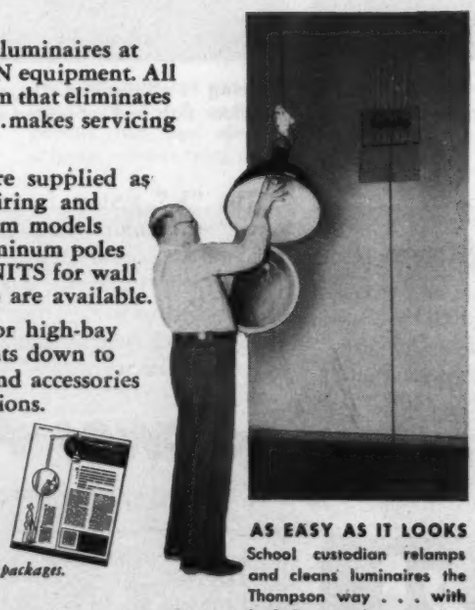
THOMPSON

POLE UNITS AND HANGERS

It's easy to maintain inaccessible luminaires at peak efficiency with THOMPSON equipment. All units feature a patented mechanism that eliminates climbing and electrical hazards...makes servicing a simple one-man job.

"SERVISAFE" POLE UNITS are supplied as complete packages ready for wiring and erecting (*). Single or double-arm models and variety of new steel and aluminum poles can be furnished. BRACKET UNITS for wall and wood pole installations also are available.

THOMPSON HANGERS . . . for high-bay indoor luminaires . . . bring lights down to floor level. Variety of models and accessories permits wide range of applications.



AS EASY AS IT LOOKS
School custodian relamps and cleans luminaires the Thompson way . . . with both feet on the ground.

For additional details, write for BULLETIN WPH-54 ("Servisafe" Units) and BULLETIN TH-55 (Indoor Hangers).

* Luminaires are not furnished in "Servisafe" packages.

T·E THE THOMPSON ELECTRIC CO.

1199 POWER AVENUE • CLEVELAND 14, OHIO

6467-TE

AE LITERATURE

(Continued from page 250)

Ceramic Numerals and Alphabet. A 4-page bulletin illustrates how numerals, letters and name panels can be assembled in ceramic tile and suggests their use as permanent building elements on walls, floors and in swimming pools. *Mosaic Tile Co., Zanesville, Ohio.*

Smog Protection. An 8-page booklet offers recommendations to safeguard occupants of buildings from the hazards and irritations of smog. *Connor Engineering Corp., Danbury, Conn.**

Furnaces. Brochures on gas-fired and oil-fired furnaces list complete model specifications and, in addition, describe the application of *Airtemp's* "V" type furnace cooling coils. *Airtemp Div., Chrysler Corp., 1600 Webster St., Dayton 1, Ohio.**

Reproduction Materials. Materials available for the preparation and reproduction of drawings and documents are described in detail in a booklet which includes a 2-page materials selection chart. *Graphic Reproduction Div., Eastman Kodak Co., Rochester, N. Y.*

Truck Leveler. A 6-page folder describes and illustrates with photographs and detail drawings a hydraulically operated truck leveler for loading dock platforms. *Rotary Lift Co., 1054 Kansas, Memphis, Tenn.**

Insulation Block. *Foamglas*, a material combining insulation and integral finish in a single block, is described in a folder that covers the manufacturing process, lists physical properties and details the available sizes. *Pittsburgh Corning Corp., 1 Gateway Center, Pittsburgh 22, Pa.**

Drafting Equipment. A 32-page catalog describes and illustrates drafting machines, drawing boards, T-squares, parallel rules, triangles, templates, curves and lettering aids. *Frederick Post Co., 3650 N. Avondale Ave., Chicago 18, Ill.*

Aluminum and Insulated Metal Panels for curtain walls, windows, doors and entrances are presented, with design and specification data, to indicate some of the possibilities of modern curtain wall construction. AIA File #17A. *Benson Mfg. Co., 18th and Agnes, Kansas City 8, Mo.*

(Continued on page 324)

DOW LATEX . . . bringing a new concept of perfection in paints . . . DOW

You can touch up LATEX painted surfaces with full assurance of a perfect match

Marred or scratched areas can be repainted quickly and easily to give an amazingly uniform appearance

Now your clients can move into their new building without worrying about scratching or marring the paint surface. For with latex paints scratches and scuffs on recently painted surfaces can be touched up to give a beautiful, uniform finish.

Latex paints offer many other advantages, too. They're easily applied, dry so quickly they can be recoated the same day, dry to a tough, durable film that's unusually cleanable. Their lack of objectionable odor means your clients can move into a painted room right away. And because latex paints can be applied right over plaster hot spots, they cut days off your building schedule.

Leading paint manufacturers make latex paints in a wide range of colors and in texture and specialty paints. They will be glad to supply you with further information upon request. For a list of their names, write Plastics Sales Department PL 513I, THE DOW CHEMICAL COMPANY, Midland, Michigan.

EASY TO CLEAN . . . Latex paints are unusually cleanable, can be cleaned with soap without damage to surface appearance.

PUT ON SOON AFTER PLASTERING . . . There's no long wait for plaster to cure. Latex paints can be applied right over fresh plaster.

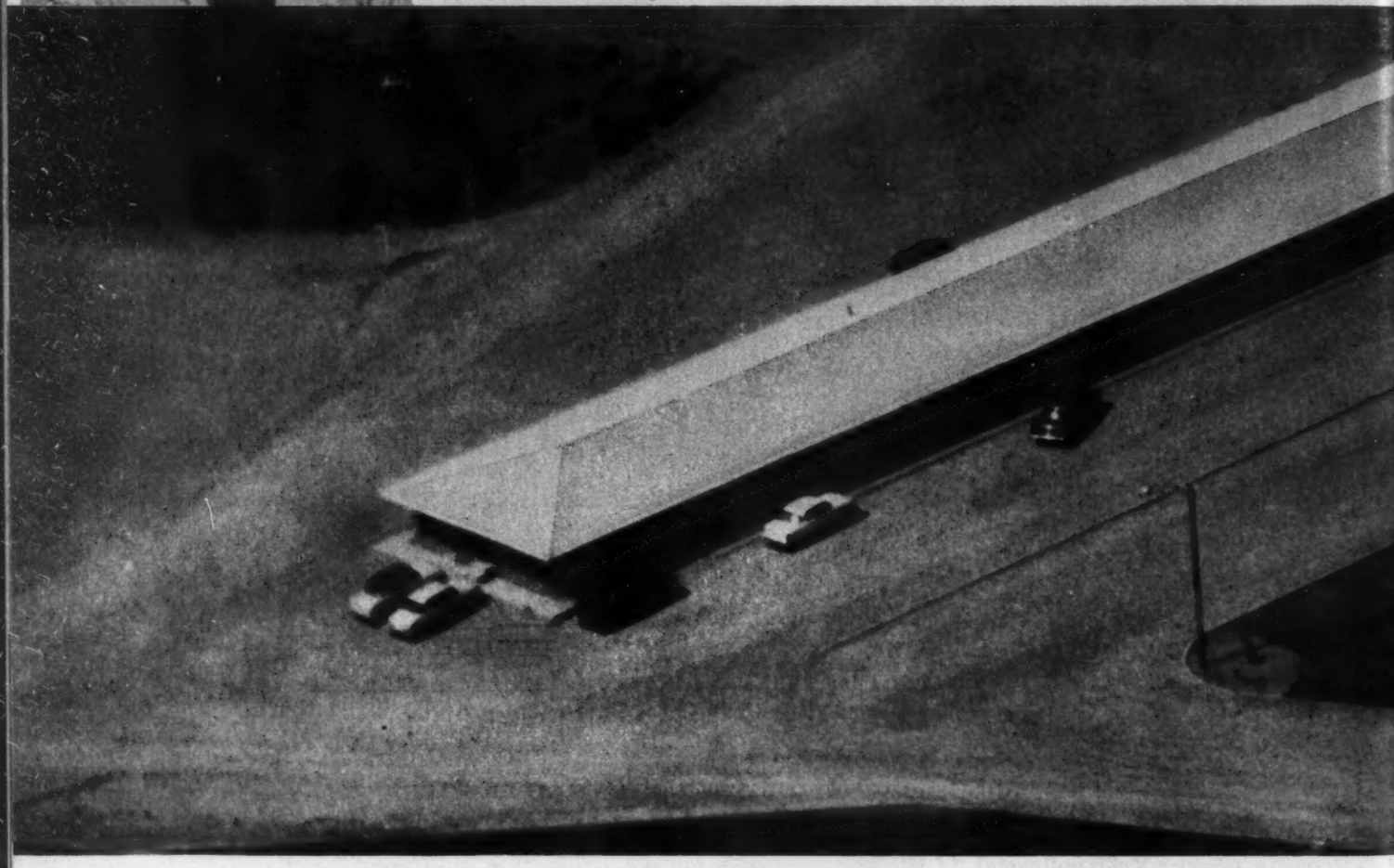
EASILY APPLIED . . . Latex paints flow easily from brush or roller to a smooth, velvety finish. No need for tedious brushing out.

FOR MANY SURFACES . . . Latex paints seal excellently over concrete block, dry wall construction and other surfaces.

you can depend on DOW PLASTICS DOW

"Roofed 30,000 sq. ft
$3,675 with

says Elmore Snary of the Ted F. Merrill Co., General Contractors, Brush, Colo

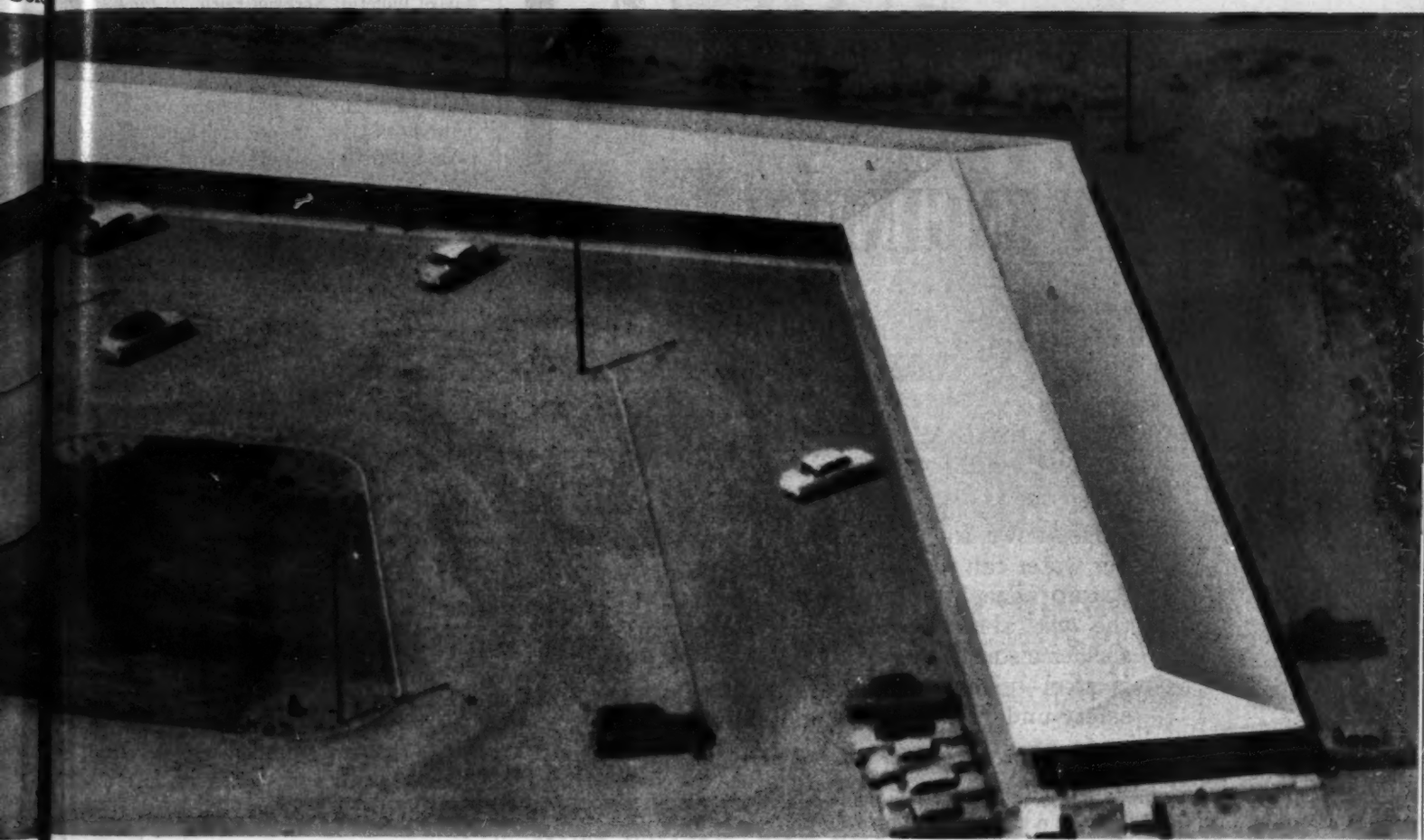


Cuts application time as much as 45%. Only one material to handle. New Insulite Roof Deck eliminates need for separate roof boards, insulation, lath and plaster and ceiling finishing. Saves 12 man-hours per 1,000 sq. ft. of surface compared with 2"x 6" D&M roof sheathing.

It's insulation with vapor barrier. No need for other insulation. Two-inch Roof Deck is comparable to 2" wood deck plus 1" fiberboard insulation and meets heat loss requirements for roof and ceiling construction. Exclusive vapor barrier protects against condensation within the unit.

Builds finished ceiling. The underside of Insulite Roof Deck is factory-finished in flame-resistant white. Lay Roof Deck over prefinished beams and ceiling is done. No need to plaster, paint, stain or wax. Available in 2'x8' units, 1½", 2" or 3" thick with or without vapor barrier membrane.

fn 1½ days . . . saved
tInsulite's 3 in 1 Roof Deck!"



He saved 11¾¢ per sq. ft. in labor costs alone. Elmore Snary's crew of 14 men worked with Insulite's 3 in 1 product—with big, handy 2'x8' Roof Deck units. And in one and a half days they had a complete built-up roof—with the exception of final mopping and spreading of white marble chips.

The Gem Oil Co. office building (shown) is not only an example of the savings possible with Insulite Roof Deck—it demonstrates the new and unique types of construction possible with Roof Deck. Look at the detail pictures on the opposite page—see how Insulite Roof Deck can solve architectural problems for you *and* give you big savings, too!

Send for complete information now! *Actual on-the-job pictures and construction details show how to use new Insulite Roof Deck to build better for less. Write Insulite, Minneapolis 2, Minnesota.*

Build better and save with

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INSULITE IS A REGISTERED TRADE MARK

Made of hardy Northern wood

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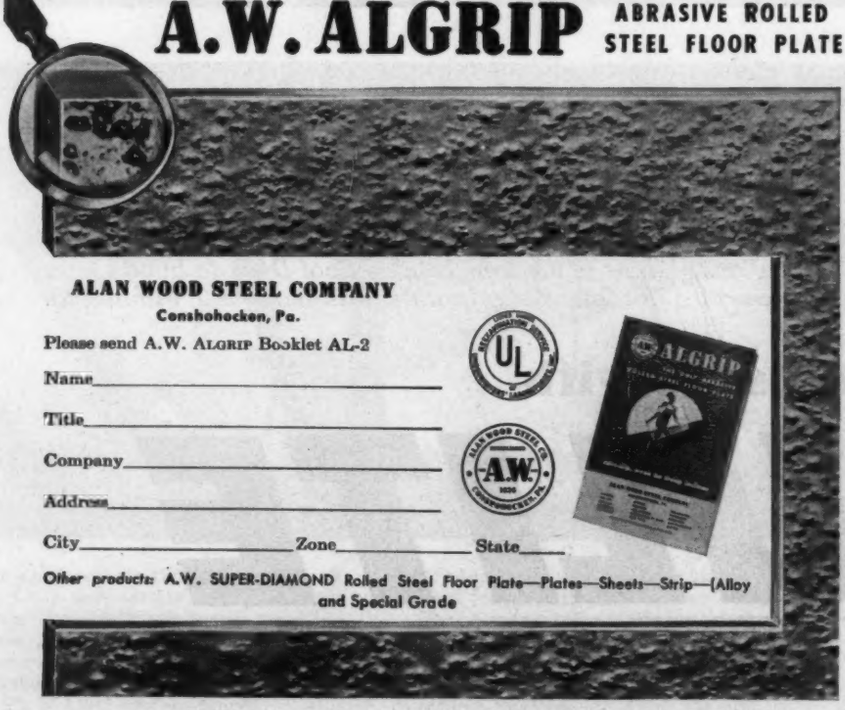
. . . that A.W. ALGRIP Abrasive Rolled Steel Floor Plate guards against slipping accidents.

He knows, too, that neither oil nor grease nor water can reduce the gripping power of ALGRIP's deeply embedded abrasive. ALGRIP, the *only* abrasive rolled steel floor plate, slashes insurance costs . . . and—because it is steel—gives many years of economical safety under heavy loads and abuse.

ALGRIP—*approved for safety by Underwriters' Laboratories.*

A.W. ALGRIP ABRASIVE ROLLED STEEL FLOOR PLATE



ALAN WOOD STEEL COMPANY
Conshohocken, Pa.

Please send A.W. ALGRIP Booklet AL-2

Name_____

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City_____ Zone_____ State_____

Other products: A.W. SUPER-DIAMOND Rolled Steel Floor Plate—Plates—Sheets—Strip—(Alloy and Special Grade

AE LITERATURE

(Continued from page 320)

Plastic Coating. Strippable plastic coating for temporary protection of lacquered, painted and enameled surfaces is described and illustrated in a 4-page bulletin. *Spraylat Corp., 1 Park Ave., New York 16.*

Wood Windows. Specifications, construction details and design information on wood windows are contained in an 8-page, illustrated catalog. *General Woodcraft Co., Inc., 34th St. and Paterson Plk. Rd., N. Bergen, N. J.**

Swimming Pool Equipment. Diving boards, pool ladders and other swimming pool equipment are described and illustrated in a 36-page booklet which includes an appendix on swimming pool operation. *Dolphin Swimming Pool Co., Inc., Elmsford, N. Y.*

Architectural Aluminum, Bronze and Steel, including window sills, handrails, pipe ells and mouldings, are described and illustrated in a 72-page catalog from *J. G. Braun Co., 537 W. 35th St., New York City.**

Shower Cabinets. Descriptions and illustrations of a line of shower cabinets are included in a 14-page catalog which also contains detail drawings, specifications and accessories. *Cutler Metal Products Co., 1025 Line St., Camden 3, N. J.*

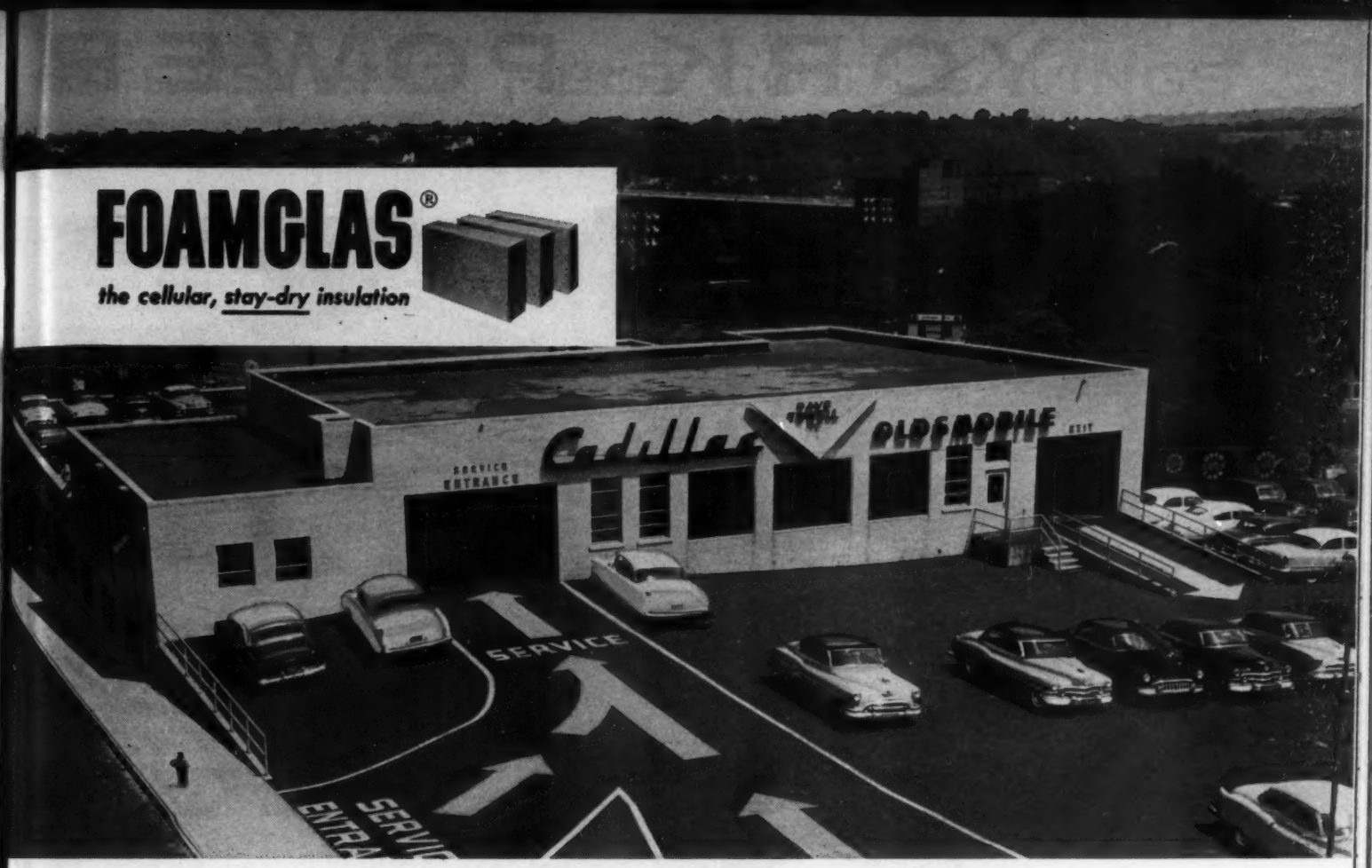
Automatic Doors. A 16-page, illustrated catalog serves as a guide for the selection and installation of *Magic Carpet* and *Magic Eye* automatic opening and closing doors. *The Stanley Works, New Britain, Conn.**

Timber Construction. A design manual offers information and specifications for timber construction. *Timber Engineering Co., 1319 18th St. N.W., Washington 6, D. C.*

Overhead Garage Doors for service stations, warehouses and industrial plants are described and illustrated with photographs and detail drawings in a 4-page folder. *Rowe Mfg. Co., Galesburg, Ill.**

Kitchen Style Book. A 12-page decorating guide for planning and color-coordinating kitchen equipment includes color photographs and layouts. *Mullins Mfg. Corp., Warren, Ohio.**

(Continued on page 328)



"Strong, stay-dry FOAMGLAS roof insulation makes rooftop parking practical"

reports Dave Towell Cadillac—Oldsmobile Agency, Akron, Ohio

The Dave Towell Cadillac-Oldsmobile Agency, Akron, Ohio wanted to use the insulated roof of their new Service Department building as a parking area. FOAMGLAS roof insulation, with its remarkable compressive strength of over 7 tons per square foot, made it practical.

Dave Towell relates: "Our architect told us FOAMGLAS was the *only* roof insulation strong enough to support the weight of cars parked on our roof . . . and still do an efficient insulating job. Its performance since the building was finished last year has proved he was right!

"We constantly park as many as 42 cars on our roof deck. That heavy load hasn't hurt the FOAMGLAS at all. It maintains a constant insulating efficiency that gives us real operating economy with our heating-ventilating system. Best of all, we know we'll get the same top performance year-after-year because FOAMGLAS can't absorb the moisture that ruins ordinary insulations."

Whatever *your* insulating problems may be, you too can profit from Mr. Towell's experience. It will pay you to find out more about FOAMGLAS, the unique cellular glass insulation that will give you *all* these benefits: It *stays dry* for constant, dependable insulating efficiency . . . its great strength and light weight suit it to a wide variety of design applications . . . it's fireproof, rot-proof, acid-proof and vermin-proof. Why not write us today for a sample and our detailed literature describing the use of FOAMGLAS to insulate roofs, ceilings, walls and floors.

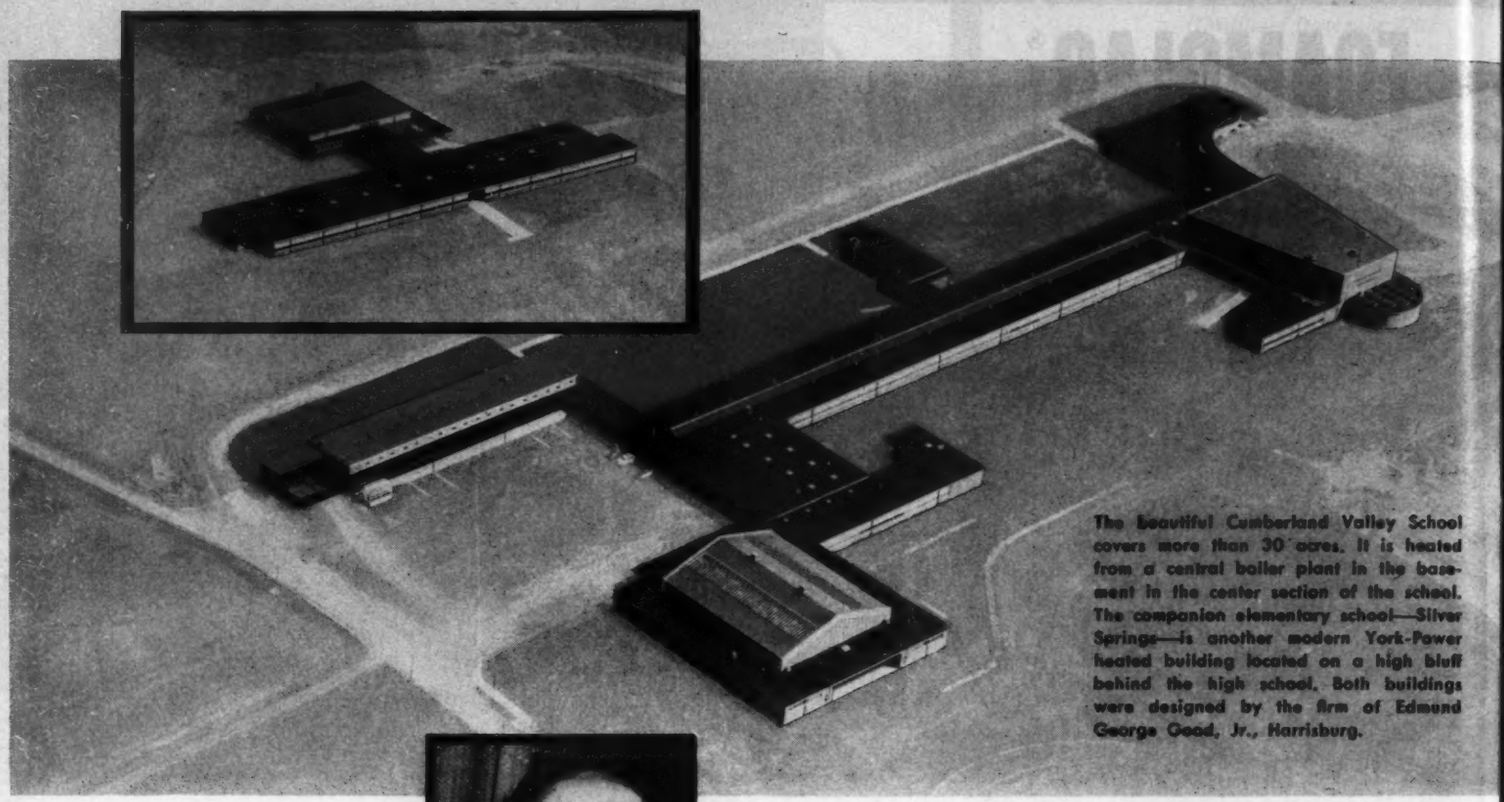
Pittsburgh Corning Corporation
Department B-105, One Gateway Center
Pittsburgh 22, Pennsylvania
In Canada: 57 Bloor St. W., Toronto, Ontario

2¼" TO 4" BITUMINOUS PAVING
1-15# FELT LAPPED 2"
4 PLY ROOFING
2" FOAMGLAS
1 PLY 15# FELT
CONCRETE ROOF DECK
Architect: William Boyd Huff, A.I.A., Akron
General Contractor: Carmichael Construction Co., Akron

Heavy power roller smooths out bituminous paving on roof deck. FOAMGLAS insulation underneath supports weight without crushing. ▶

YORK-POWER

...AND IMPROVE OPERATING



The beautiful Cumberland Valley School covers more than 30 acres. It is heated from a central boiler plant in the basement in the center section of the school. The companion elementary school—Silver Springs—is another modern York-Power heated building located on a high bluff behind the high school. Both buildings were designed by the firm of Edmund George Good, Jr., Harrisburg.

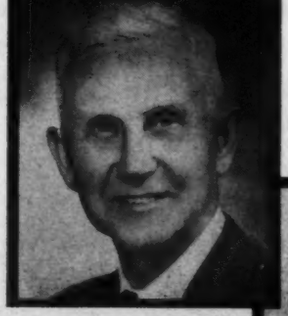
IN BOILER ROOM DESIGN

Edmund George Good, Jr., registered architect, Harrisburg, Penna., found that the York-Power Factory-Coordinated fuel burning systems offered the modern unitary design features that he desired in planning the boiler rooms for the prize-winning Cumberland Valley School jointure west of Harrisburg. "This equipment gave us the necessary controls and safety features which are so important," Mr. Good stated.

IN BOILER ROOM ENGINEERING

Charles Johnson, P. E., consulting engineer of Lemoyne Penna., heating and air-conditioning specialist, reports the "York-Power's F/C panel board with its packaged control system, with all controls factory wired for easy connection in the field, simplified installation and eliminated ragged field wiring."

IN EQUIPMENT INSTALLATION



"The York-Power F/C system with its windboxes and refractory rings for quick installation of York-Power burners to the boiler eliminated costly boiler checker-work in the installation and the factory-wired F/C panel board enabled us to make fast, economical installation of the oil-fired system," R. E. Wolfe, Harrisburg heating contractor for Cumberland Valley School, stated.

"Our confidence in York-Power burners, built up through years of experience with the equipment, was fully justified in the installation at the Silver Springs School," Walter C. Eshenaur, Penbrook (Harrisburg) heating contractor, reported. "The start up was good and the automatic operation with modulation was trouble-free during the first heating season."

F/C SYSTEMS HELP COST SAVINGS
CONDITIONS IN MODERN SCHOOLS

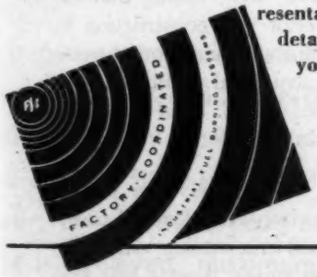
F/C Panel Boards, part of the complete York-Power factory coordinated industrial fuel burning system, protect all controls from damage, dirt, and dust because they are housed in air-tight steel cabinets. F/C Panels are unitary in design so that all auxiliary units can be installed adjacent to them to provide an eye-appealing set up. Controls within the panels are wired at the factory to terminal strips for fast, trouble-free field wiring. These completely factory-coordinated fuel burning systems provide the modern answer to economical, low-cost installations.

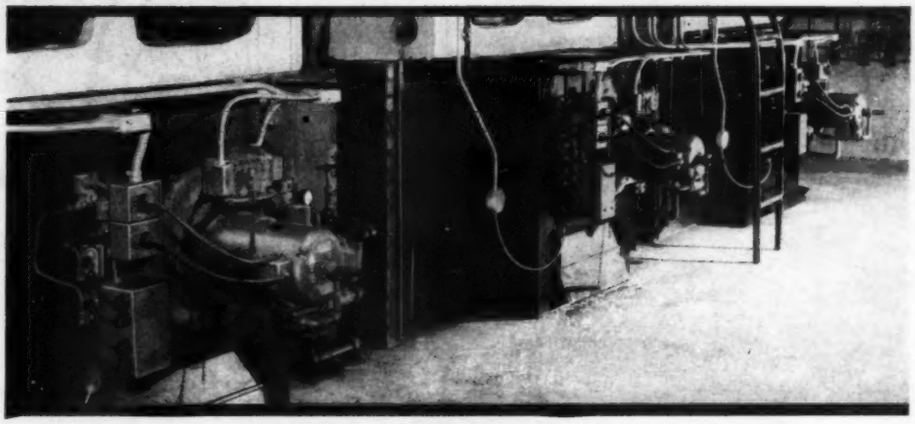
F/C PANEL BOARDS

These York-Power F/C Panel Boards provide the control for three burners in the high school. Main panel boards (Model F/C 1001) include the controls for FP-2 System. Subsidiary panels handle: Draft Inducer; Master Relay Controls. ● Details of wiring of a main panel are shown in inset photograph.

Larry Witmer, engineer in charge of the Cumberland Valley School installation says "The York-Power F/C System makes my job of power plant operation and supervision much easier because all of the controls are easy to service, and are kept clean in their dust-free steel cabinets."

The heart of the York-Power F/C System is the time-tested, field-proven York-Power Horizontal Rotary Oil Burner. These precision fuel-burning units provide complete modulation over the entire firing cycle. They are designed for operation with light or heavy oil, and/or gas, and have all of the advanced engineering features necessary for precision combustion. York-Power F/C windbox assemblies provide the precise air control necessary, plus the added feature of quick installation. Ask your York-Power representative for further details, or write on your letterhead for a free copy of 12-page F/C booklet.





F/C FUEL BURNING SYSTEMS

The Cumberland Valley School installation includes three C-175-AGM (15 to 60 G.P.H.) York-Power Industrial Burners attached to the boilers with York-Power windbox assemblies. Two No. 400 Pump Sets handle the fuel oil. ● Two B1-100-AGM Burners (11 to 33 G.P.H.) fire the boilers for Silver Springs Elementary School. Two No. 225 Pump Sets are used. These burners are shown in the photograph at the bottom of the page.

YORK-SHIPLEY, INC.

YORK, PENNSYLVANIA

INDUSTRIAL POWER AND HEATING SPECIALISTS SINCE 1918

Install Plugmold
the modern electrical outlet system
in your homes

PLUGMOLD is EASY, FAST and ECONOMICAL
to install . . . neat, permanent, safe

In today's growing competitive market, builders everywhere are realizing more than ever before, that Plugmold not only upgrades the value of homes, but is also a convenience that helps SELL HOMES!

The house with plenty of outlets *rates higher with buyers.* Plugmold provides a continuous run of outlets every 60", 30" or closer, all around the house, or any part of it.

For more information, write to Dept. A 10

AE LITERATURE

(Continued from page 324)

Insulation Adhesives and Coatings. A 4-page, illustrated folder contains two comprehensive charts which list adhesive and coating products, their uses and characteristics, including temperature limits, application methods, drying times, solvents used, colors and estimated coverage. *Minnesota Mining & Mfg. Co., Dept. Z5-45, 411 Piquette Ave., Detroit 2, Mich.**

Laboratory Data Sheets. *F16, Plugmold 2000 on Electronics Test Benches* and *F18, 3000 Wiremold Multi-Outlet System for Electronics Test Benches* are available from *The Wiremold Co., Hartford 10, Conn.*

Building Products Directory. Ninety-two pages of manufacturers' data are included in *Technical Bulletin No. 72* from the *Producers' Council, Inc., 1001 15th St. N.W., Washington 5, D. C.*

Rolling Gymstands are illustrated and described in a 14-page catalog which contains data, available variations from standard models, accessories, planning aids and specifications. *Wayne Iron Works, Wayne, Ind.*

Glass Bath Enclosures are described and illustrated in a 4-page folder which lists dimensions. *Shower Door Co. of America, Atlanta, Ga.**

Lightsteel Technical Manual. Isometric drawings show methods of applying collateral materials to Lightsteel sections for floor, roof, ceiling and interior and exterior wall construction in a 12-page technical manual on the use of Lightsteel structural sections. *Penn Metal Co., Inc., 205 E. 42nd St., New York 17, N. Y.**

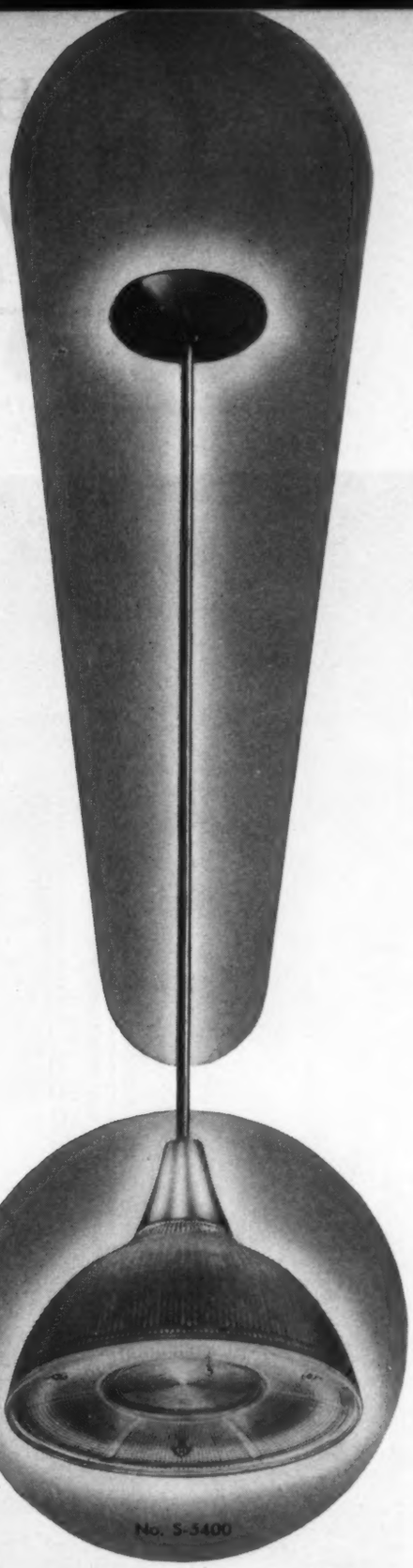
Micarta on Furniture. The use of *Micarta* for horizontal surfaces of furniture is described in a catalog which displays bedroom suites, dinette sets and occasional pieces designed by some leading designers. *U. S. Plywood Corp., Weldwood Bldg., 55 W. 44th St., New York 36, N. Y.*

Residential Exhaust Fans and electric bathroom heaters are covered in a booklet which offers specifications, installation information and detail drawings as well as suggestions for efficient kitchen ventilation. *Broan Mfg. Co., Inc., 1669 N. Water St., Milwaukee 2, Wis.*

new...

the most advanced achievement in fifty-seven years of lighting research . . . the incomparable

PARADOME*



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CLASSROOMS, MODERN OFFICES, SHOPPING CENTERS, PUBLIC INSTITUTIONS . . .

Through an altogether new idea, using a concave circular CONTROLENS* and a new Prismatic Reflector enclosed in a special fiber-glass (FIBERGLO*) cover, an extraordinary control of light is achieved. Maximum illumination is directed to vital areas with the best visual comfort and lowest brightness. Paradome's graceful design conforms with all modern interiors—particularly today's classrooms.

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For Better Lighting . . . Be Specific . . .

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HOLOPHANE

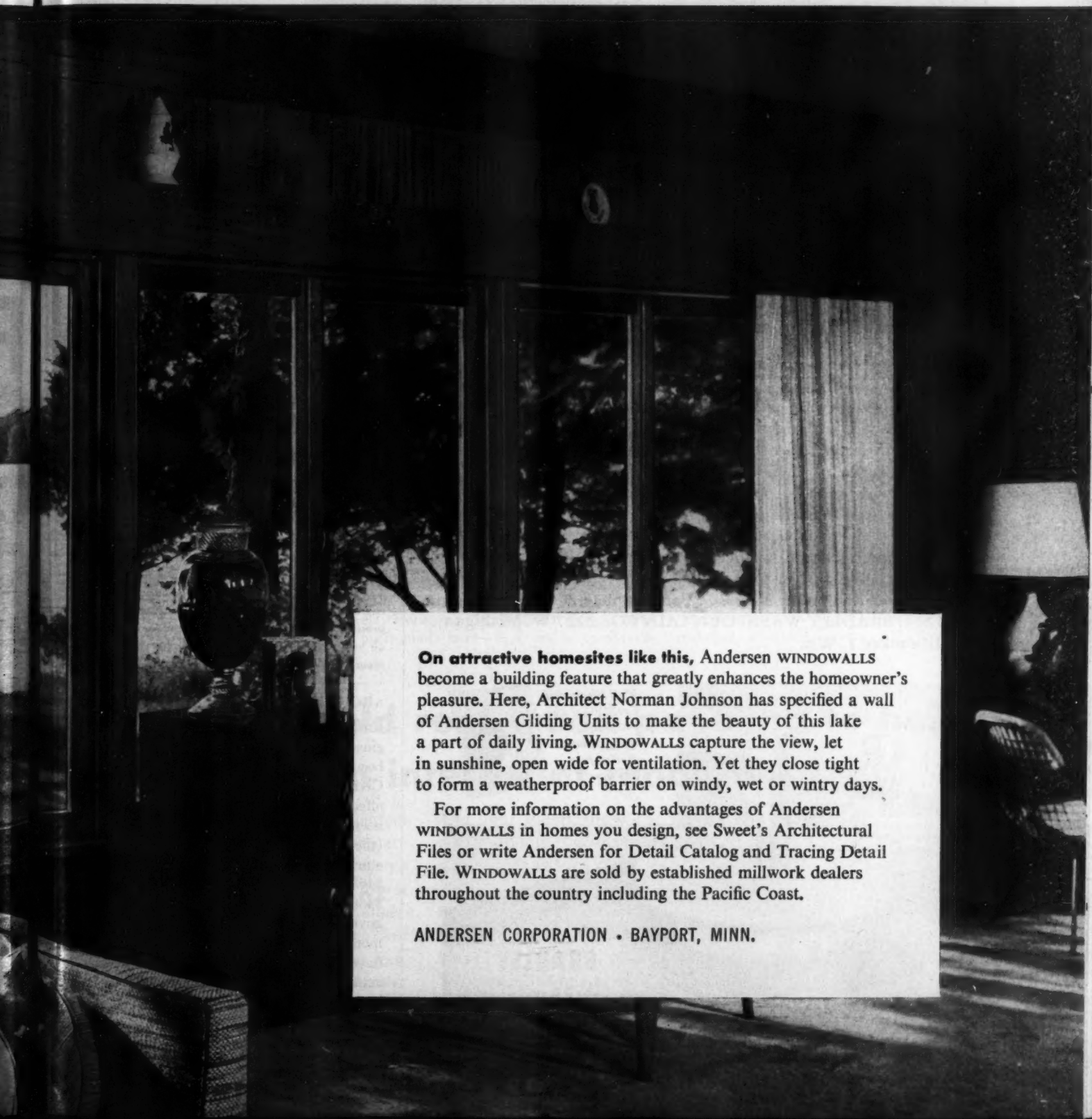
HOW TO OPEN UP A HOME T

Andersen

E TO OUTDOOR LIGHT AND BEAUTY

Windowalls

TRADEMARK OF ANDERSEN CORPORATION

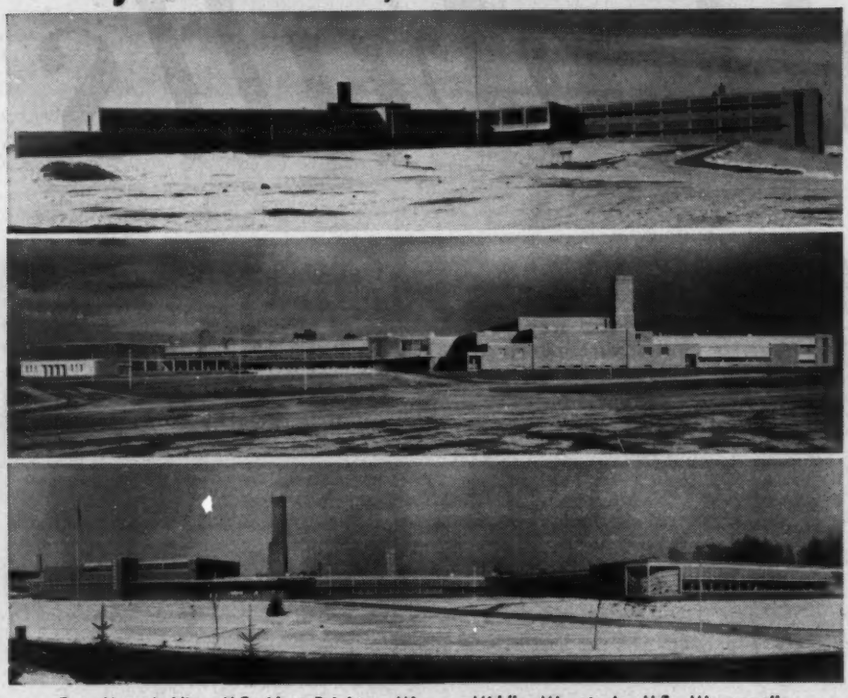


On attractive homesites like this, Andersen WINDOWALLS become a building feature that greatly enhances the homeowner's pleasure. Here, Architect Norman Johnson has specified a wall of Andersen Gliding Units to make the beauty of this lake a part of daily living. WINDOWALLS capture the view, let in sunshine, open wide for ventilation. Yet they close tight to form a weatherproof barrier on windy, wet or wintry days.

For more information on the advantages of Andersen WINDOWALLS in homes you design, see Sweet's Architectural Files or write Andersen for Detail Catalog and Tracing Detail File. WINDOWALLS are sold by established millwork dealers throughout the country including the Pacific Coast.

ANDERSEN CORPORATION • BAYPORT, MINN.

THREE MORE MODERN SCHOOLS
by Architects, Bissell & Belair



Top: Mounds View H.S., New Brighton, Minn. • *Middle:* Minnetonka H.S., Minneapolis.
Bottom: Alice Smith Elem. School, Hopkins, Minn. Architects for above schools, Bissell & Belair, Minneapolis

Equipped with Sanitary BRADLEY WASHFOUNTAINS

During the last 20 years particularly, school authorities and architects have recognized the vital need for adequate, economical and sanitary wash fixtures. Group type fixtures like Bradley Washfountains are providing such facilities with foot-control and self-flushing bowls.

With Bradleys, the danger of spreading infectious diseases is eliminated—there are no faucets and no used water collects in the bowl. No water waste either because supply is cut off immediately foot-ring is released. Bradleys serve more in less space,—help cut building and installation costs . . . For complete details write for Cat. 5204. BRADLEY WASHFOUNTAIN CO., 2227 W. Michigan St., Milwaukee 1, Wis.

Well illustrated Cat. 5204 with complete specifications mailed free on request.

THE RECORD REPORTS

GOVERNMENT PERIODICALS

(Continued from page 24)

educational efforts to cope with the problem of an expanding population in the over-65 age group.

CONSTRUCTION REVIEW. Published monthly as a joint effort of the Department of Commerce and the Department of Labor; available from the Superintendent of Documents, U. S. Government Printing Office at a rate of $.30 per issue or $3.00 per year. The regular format includes a special feature each month (in August 1955: "Work Stoppages in Construction, 1946–54") and comparative figures on construction put in place, new housing, building permits, contract awards, costs, materials and employment. The publication also carries news of legislation and government regulations affecting construction.

U. S. NAVY CIVIL ENGINEER CORPS BULLETIN. Published monthly by the Bureau of Yards and Docks, Navy Engineers Corps, for distribution to Corps officers; no subscription charge. The magazine's feature articles handle such subjects as the training and operations of naval construction units and research—the August 1955 issue carried the second part of a study of "The Effects of Sea Water on Waterfront Structures."

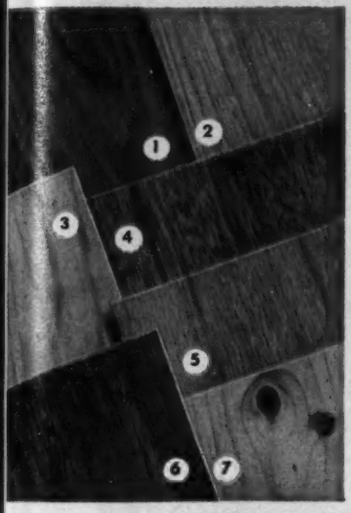
TECHNICAL NEWS BULLETIN. Published monthly by the National Bureau of Standards, Department of Commerce, and available from the Superintendent of Documents, U. S. Government Printing Office, at the rate of $.10 per issue or $1.00 per year. This journal reports findings of the bureau's research in a number of technical fields, including, from time to time, research into building structure and materials, heating, plumbing, etc.

MONTHLY CLIMATIC DATA FOR THE WORLD. Published monthly by the Weather Bureau, Department of Commerce; available from the Superintendent of Documents, U. S. Government Printing Office at the rate of $.25 per issue or $2.75 per year. The 19-page periodical consists entirely of raw data for surface temperature, pressure, humidity and precipitation and for upper air measurements gathered from weather stations around the world.

ARCHITECT SALARIES UPPED

Entrance salaries for architects and engineers in Federal employment have been increased by recent action of the Civil Service Commission. The increases affect grades five and seven of the engineers and physical scientists categories (the latter includes architects), with starting salary for grade five going from $4035 to $4345 and for grade seven from $4580 to $4930. The idea is to make government salaries in these categories more nearly competitive with those offered by private industry so the most acute government recruitment needs can be met.

PLANKWELD'S SO EASY TO PUT UP! 16¼" wide by 8' high panels fasten to wall with special metal clips that are then *completely concealed* by overlapping of the panels. *No* worry about joints—*no* nail holes to fill.



YOU CHOOSE FROM WORLD'S FINEST WOODS. In Plankweld paneling there's a complete range of light to dark woods: (1) walnut at $74, (2) Korina® at $74, (3) birch at $60, (4) Philippine mahogany at $60, (5) oak at $69, (6) Honduras mahogany at $69, and (7) knotty pine at $60. (Prices are approximate retail for a wall 12' x 8'.)

GIVE LIVING ROOMS new life, new sparkle with Plankweld. Famous designer Russel Wright used panels horizontally here—they can be used vertically, too. Mr. Wright designed serving cart for "Famous Designers" plans (see coupon). Philippine mahogany Plankweld covers a 12' x 8' wall for only **$60** (RETAIL PRICE)

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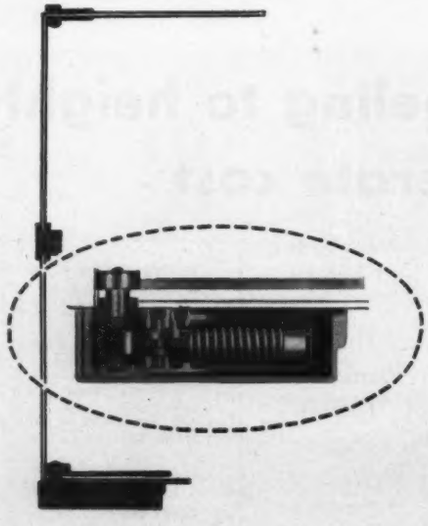

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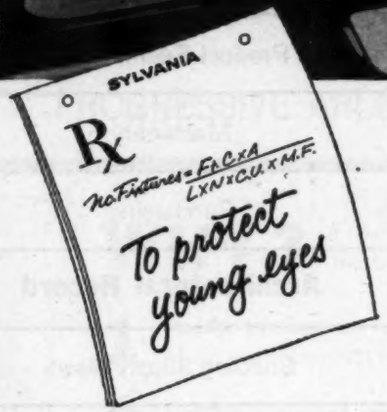
Sylvania I. C. Low-Brightness Fixtures, used in Jefferson Junior High School, Clairton, Pa., to give young eyes best seeing, reading, working conditions—without louvers. I. C. units are available with steel, aluminum or translucent plastic side panels.



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Modern Machine Shop	Modern Machine Shop	**Architectural Record**
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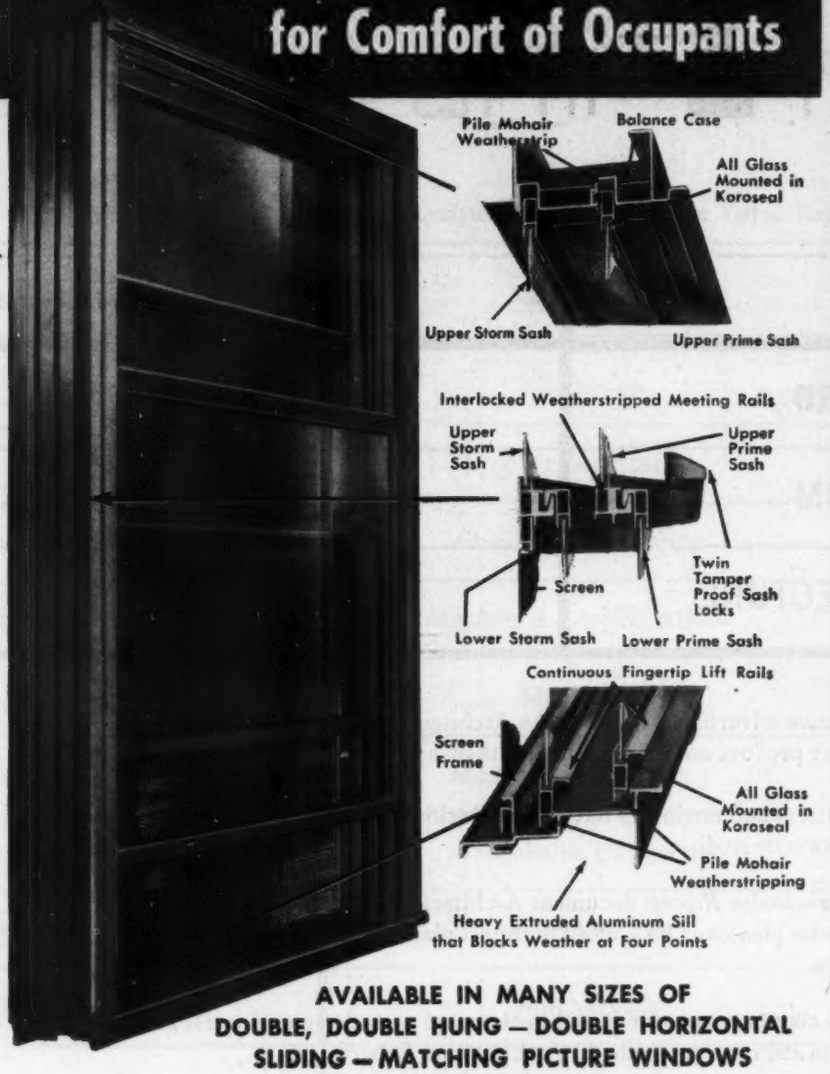

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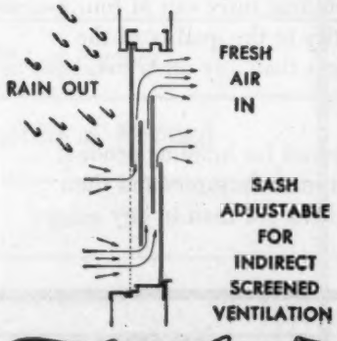

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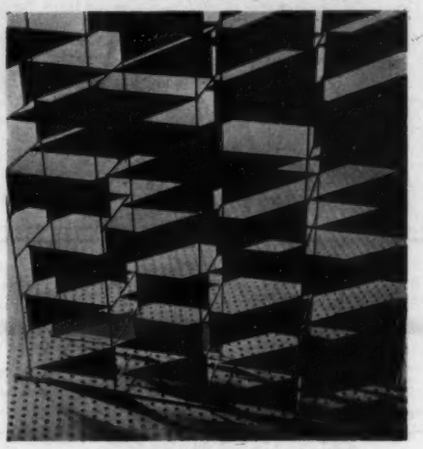
A SPECIAL REPORT

ASPEN CONFERENCE

(Continued from page 48)

what incomplete, thereby giving the observer a chance for completion." He maintained that his work resulted from a desire to parallel natural processes

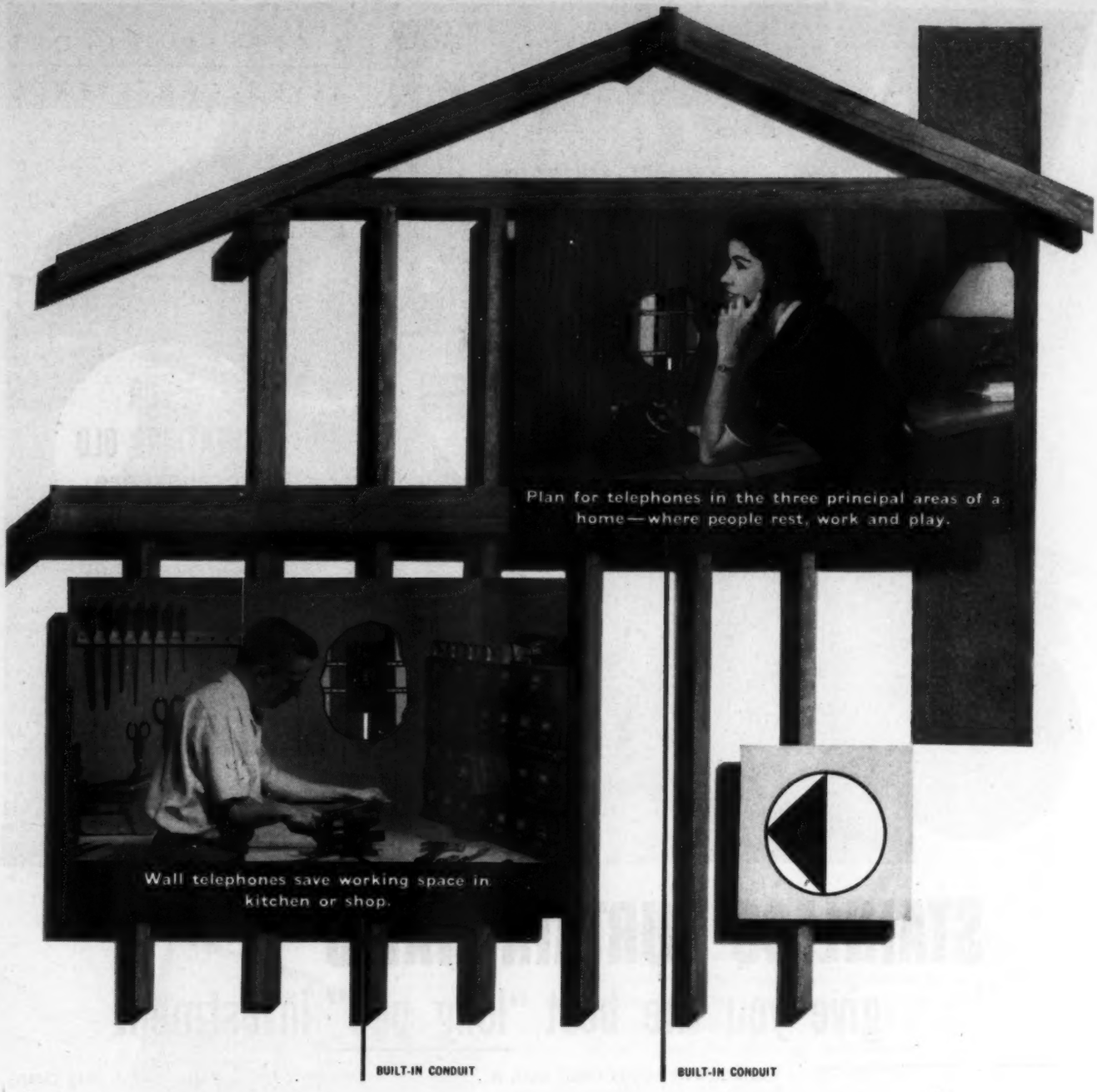


Bertoia's light sculpture

rather than simulate the visible world. He spoke of the integration of color with structure and this gave point to a remark made by Walter A. Netsch Jr. of Skidmore, Owings & Merrill during the same session. Netsch described the new Air Force Academy at Colorado Springs for which his firm is architect-engineer and he said that the attention to color in the architectural environment had been so detailed that it had taken into account the 2500 or so cadets in uniform who will be moving about.

Victor Gruen, speaking on "Cityscape and Landscape," redefined the Conference theme as the merging of a dozen freeways with clover leaves like the tentacles of a giant octopus with all the directional signs removed. Gruen claimed that architecture's most urgent mission today is to convert chaos into order and he went on to describe an American species of chaos that made the European visitor feel very much at home. *Technoscape*, he said, is dotted with oil wells, derricks, dump heaps and auto cemeteries. *Transportationscape*, with miles of cars on concrete deserts, bill boards and dangling wire. *Suburbscape* "with phoney respectability and genuine boredom effectively isolated from the world by traffic jams." And, finally, *Sub-cityscape* filling up the distance between cities and suburbs with shacks and shanties, rubbish, dirt and trash.

(Continued on page 342)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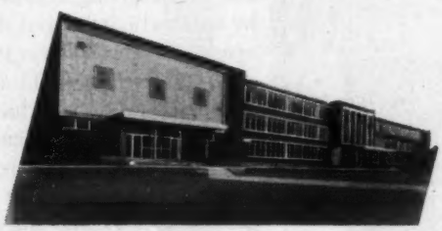
This school is fire-safe!
It has a "FIREFIGHTER" GYPSUM ROOF DECK

Lima Senior High School, Lima, Ohio. *Architects:* McLaughlin & Keil, Lima; Strong, Strong & Strong, Lima; *General Contractor:* H. U. Tuttle, Lima; *Roof Deck Contractor:* Anning-Johnson Co., Cleveland, Ohio.



Students at Lima's new Senior High School are protected from fire by 140,000 square feet of Gold Bond "Firefighter" Gypsum Roof Deck. Fire spread danger is greatly reduced because incombustible gypsum doesn't transmit high temperatures or warp when exposed to hot flame.

Gold Bond "Firefighter" Roof Decks are specified for economy as well as safety. Insulation *and* sound-conditioning are achieved by using Econacoustic Roof Formboard, and the undersurface creates a finished interior ceiling. "Firefighter" Roof Decks go up fast... *up to 30,000 sq. ft. can be poured in a single day.* Quick setting action permits full load capacity in under an hour! Low dead load permits lighter supporting structures and allows sizable savings in construction costs. Adaptable to pitched, barreled or flat roof designs.

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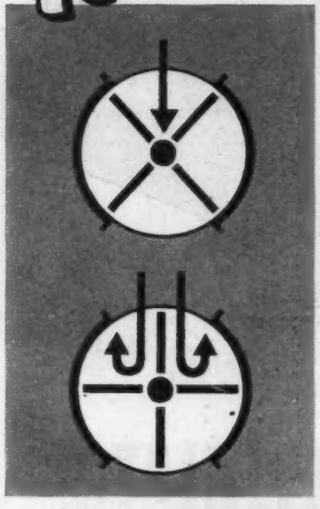
HOW

REVOLVING DOORS cut heating costs



Drafts cannot be created through revolving doors, because at least two wings always contact the circular enclosure wall. Each passage admits only 26 cubic feet of outside air, compared to 1800 cubic feet or more admitted by a swing door entrance. Average savings of 25% or more on heating costs make a revolving door entrance a self-paying investment . . . only one of many reasons why these doors belong in your building or remodeling plans. Mail coupon above for newest data. See Sweet's Architectural File or classified section of your Telephone Directory.

International Revolving Door Entrance at the Boston 5 Cents Saving Bank, Boston, Mass. Architect: Archie Reskin, Boston, Mass.

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A SPECIAL REPORT

ASPEN CONFERENCE

(Continued from page 338)

One of the architect's answers to this sorry state of affairs appears to be that new building type, the planned, "integrated" shopping center. Gruen described his own Northland, near Detroit, as "the first large scale conscious planning effort made by the forces usually considered as upholding rugged individualism." And Northland appears to be a success; not only commercially in its first year of operation, but also culturally as a center for civic and religious events. Northland and others like it in America, teach a lesson which should be heeded in other countries. Only the scale of these operations tends to stagger the spectator. In one of them there will be an air conditioned 30,000-sq-ft center of shops on two levels; and in another replanned commercial area, moving sidewalks with all cars and service transportation running on underground roads.

Finally, the Conference talked of "Leisure"; and one of the platform speakers of the day, Arnold Arnold, a designer who is currently making a success of some new toys, started straight in with the assumption that a 20-hour week is a near-reality. Incidentally, the 20-hour work week, the equivalent of 322 days vacation a year, not counting 4th July and Thanksgiving, is to be made possible by automatic industrial and commercial operations. But there is still likely to be plenty of work for architects, for Arnold said that we should have houses designed for leisure-time employment, for creative use and not for social status. So Aspen ended on "Leisure" and the delegates returned home talk-tired but stimulated, if only by the prospect of a bigger and better get-together next year.

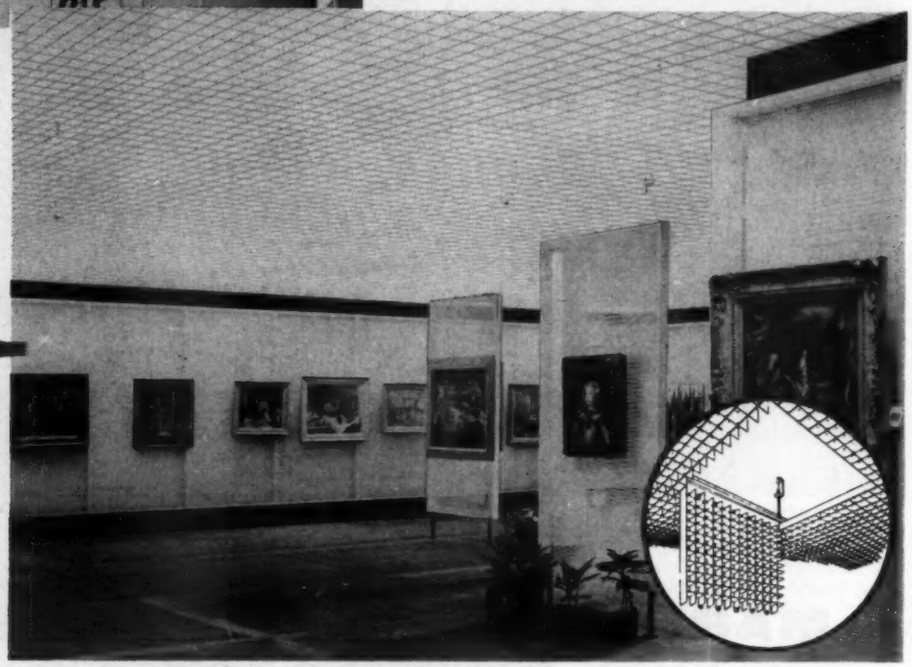
Art Gallery Demands Ideal Lighting...

Before

CHOOSES
NEO-RAY
LOUVRED CEILINGS

SAN JOAQUIN PIONEER MUSEUM
Stockton, Calif.
Contractor: G. Roek, Stockton, Calif.

After



Here's an interesting application of a louvred ceiling in a museum. The problem was twofold:

1 — to clean up an ugly ceiling cluttered with beams, wires, lights, etc.

2 — to properly illuminate the pictures in the gallery.

Both problems were solved when Neo-Ray CU-3636 Louvred Ceilings were specified.

1 — an unbroken, continuous louvre pattern throughout the area.

2 — around the perimeter of the room lighting is used above the louvers to throw light at the hanging pictures.

Here's another application where Neo-Ray Louvred Ceiling is functional, decorative...and saves the cost of a new ceiling. This lighting problem was submitted to our engineering department, and the above is the solution.

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See our catalog in Sweet's Architectural File sec. 30a/NE

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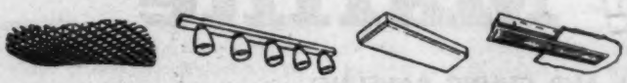

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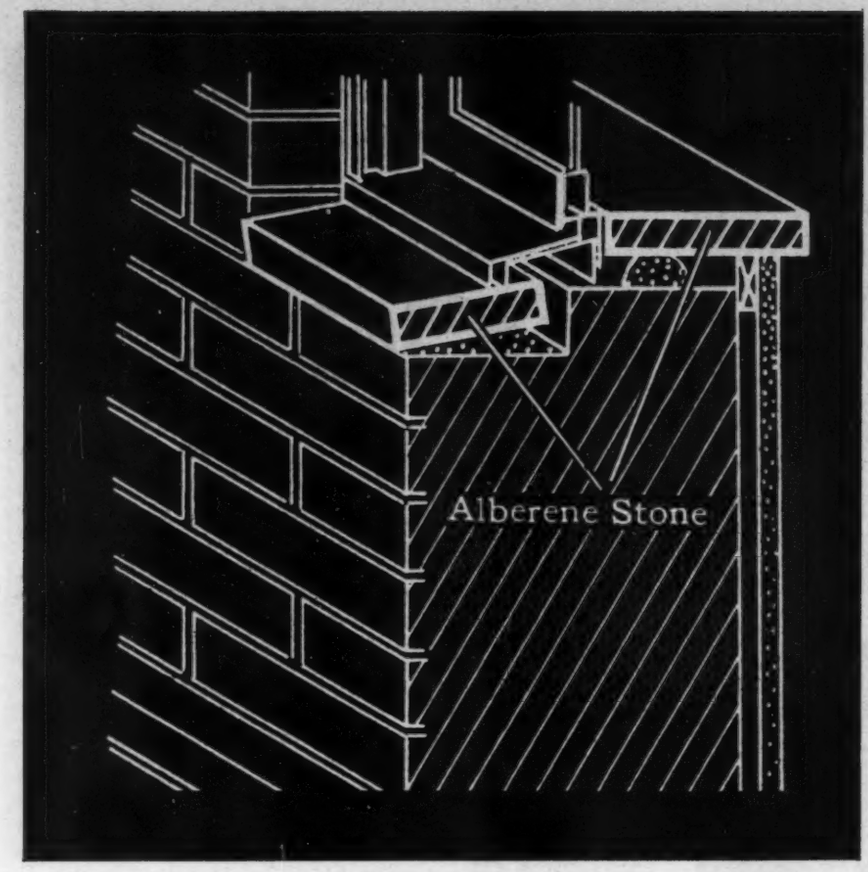
In Canada, write to 80 Ward St., Toronto, Ontario.

Send literature on Iron Fireman SelecTemp heating.

Name_____

Address_____

City_____ State_____



Let's talk "SILLS and STOOLS"

—that are both durable and attractive.

Alberene Stone—*the natural silicate stone*—is weatherproof. Its low absorbency prevents spalling and splitting in freezing temperatures. Its all-silicate mineral components resist chemical attack, staining and loss of surface polish. It requires no maintenance.

Alberene Stone is supplied in two grades: *Regular grade* is medium hard, durable and economical. It has high chemical, weather resistance. And a pleasing bluish gray color. *Serpentine grade* is very hard with even higher resistance and durability. It takes a high hone finish that is bluish black; also a polished finish that is jet black. Since there is a substantial difference between the two grades, it is important that the proper grade be clearly stated in the specifications.

That's why Alberene Stone window stools have recently been shipped to many of the finest new hospitals in the country including: Providence Hospital, Washington, D. C.; Baptist Memorial Hospital, Memphis, Tenn.; Coney Island Hospital, New York; and the Grady Hospital, Atlanta, Ga.

For information and technical assistance, address: Alberene Stone Corporation, 419 Fourth Avenue, New York 16, N. Y.

ALBERENE STONE

provides LOW ABSORBENCY protection

THE RECORD REPORTS

ON THE CALENDAR

October

2–5 The 34th annual fall meeting and chapter presidents' conference, Producers' Council, Inc. — Hotel Statler, Detroit

3–6 Seventh Mental Hospital Institute, sponsored by the American Psychiatric Association Mental Hospital Service — Sheraton-Park Hotel, Washington, D. C.

4–5 Roundtable sponsored by the American Academy of Pediatrics — Chicago

5–7 The 29th Design Conference sponsored by the Institute of Contemporary Art (Boston) — Arden House, Harriman, N. Y.

6–8 Regional Conference of the Gulf States District, American Institute of Architects — Roosevelt Hotel, New Orleans

6–8 California-Nevada-Hawaii Regional Conference, American Institute of Architects — Biltmore Hotel, Santa Barbara, Cal.

6–8 Annual convention, California Council of Architects — Santa Barbara, Cal.

6–8 The 11th annual meeting and design conference, Society of Industrial Designers — Hotel Woodner, Washington, D. C.

6–8 Annual convention, Structural Engineers of California — Yosemite National Park, Cal.

10–14 Plant Layout Technical Workshop; a clinic and technical workshop on two- and three-dimensional planning of plant layout — Greater Pittsburgh Airport Hotel, Pittsburgh

12–15 Tenth Annual Conference, Central States District, American Institute of Architects — Hotel Jefferson, St. Louis

13–15 Annual convention, New York State Association of Architects — Sheraton Ten Eyck Hotel, Albany, N. Y.

13–15 New York Regional Conference, American Institute of Architects, — Sheraton Ten Eyck Hotel, Albany, N. Y.

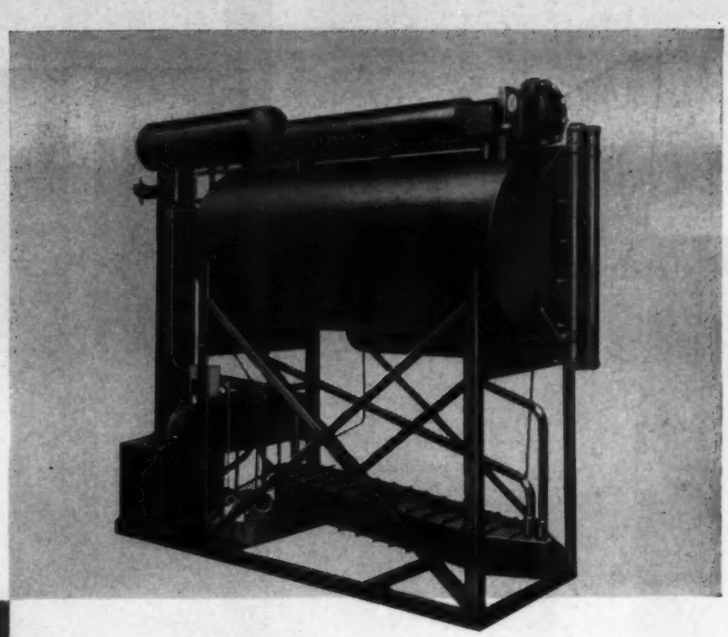
13–15 Annual convention, American Federation of Arts — Des Moines Art Center, Des Moines, Iowa

14–15 North-Central States Regional Conference, American Institute of Architects — La Salle Hotel, Chicago

(Continued on page 350)

Now!

More flexibility for air conditioning existing and new buildings . . .



. . . with Servel water chillers

Here's real versatility in air conditioning. Servel water chillers are vibration-free and have low floor loading. That means you can place them anywhere you have space . . . on the roof, in the basement, on any floor in between.

What's more, Servel water chillers are compact in size. Space requirements permit single or *multiple* installations in the most advantageous locations.

And talk about economy . . . these Servel units give you lower air-conditioning costs per square foot of space. They provide summer cooling with the cheapest fuels. What's more, they can be powered with existing boilers. Run them on steam from any source . . . district steam . . . even waste steam. Another important saving is the fact that no heavy-duty rewiring is required.

Servel water chillers save on maintenance, too. The cooling unit has no moving parts, so operation is vibration-free . . . there's nothing to wear.

Check these great Servel advantages against your cooling needs. Servel will gladly supply details and engineering help. Mail coupon today.

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the name to watch for great advances in

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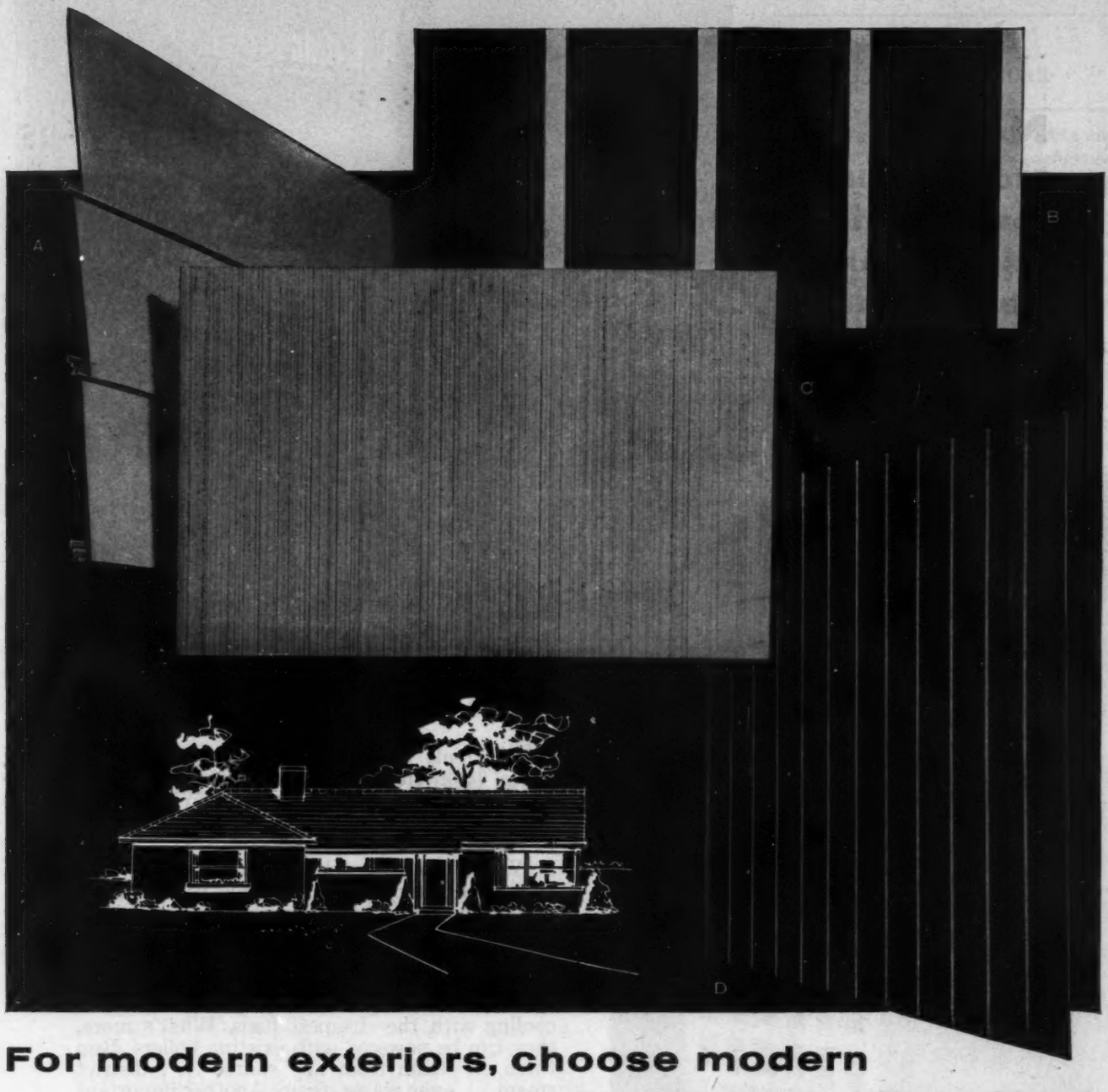
Please send me full information on Servel water chillers and air-conditioning equipment.

Name_____

Building_____ Size_____ When Built_____

Address_____

City_____ State_____



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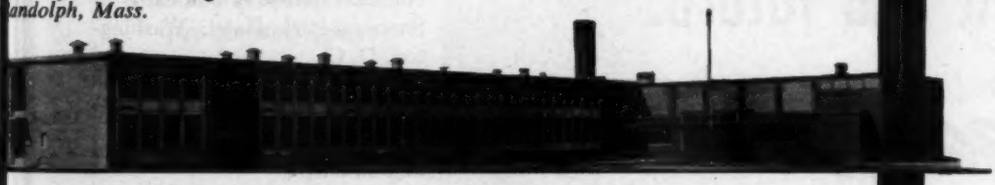
lymouth, Mass.

rchitect—Walter M. Gaffney, Hyannis, Mass. • Gen'l Cont.—C. A. Batson Co., Brockton, Mass.
lbg. Whlslr—Locke Stevens, Inc., Somerville, Mass. • Plbg. Cont.—Velardo Plumbing Co., Duxbury, Mass.

bington Elementary School
bington, Mass.

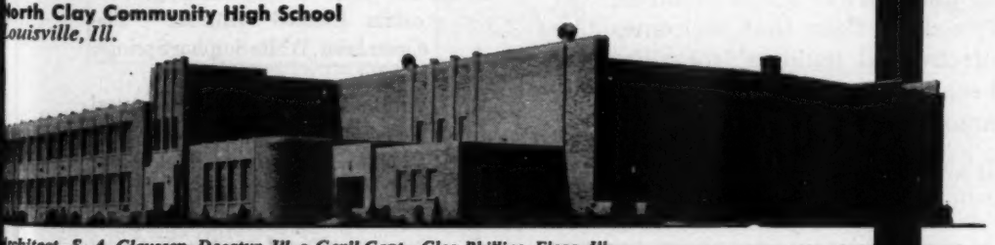
rchitect—Walter M. Gaffney, Hyannis, Mass. • Gen'l Cont.—Park Const. Co., Boston, Mass.
lbg. Whlslr—Locke Stevens, Inc., Somerville, Mass. • Plbg. Cont.—Velardo Plumbing Co., Duxbury, Mass.

ndolph Jr. & Sr. High School
ndolph, Mass.



rchitect—Harry J. Korsland, Norwood, Mass. • Plbg. Whlslr—Bennett Co., Somerville, Mass.
lbg. Cont.—C. H. Cronin, Inc., Boston, Mass.

orth Clay Community High School
Louisville, Ill.



rchitect—S. A. Claussen, Decatur, Ill. • Gen'l Cont.—Cleo Phillips, Flora, Ill.
lbg. Whlslr—Capitol Plumbing and Heating Supply Co., Springfield, Ill. • Plbg. Cont.—E. M. Petty, Flora, Ill.

Vest Jr. High School
Brockton, Mass.

Architect—J. Williams Beal & Son, Boston, Mass. • Gen'l Cont.—Platt Const. Co., Boston, Mass.
Plbg. Whlslr—Locke Stevens, Inc., Somerville, Mass. • Plbg. Cont.—Edward W. Diegoli, Brockton, Mass.

it's the **toughest test** of all—when **plumbing fixtures** go to **school**

When you install plumbing fixtures in a school restroom, you've got to be sure they'll stand up under the awesome energy of youth. That's why so many schools install Richmond fixtures—they're MORE than "equal" to that kind of treatment.

When you specify Richmond, you're choosing plumbing fixtures of maximum durability with minimum maintenance—the end products of correct design, careful selection of raw materials and close control in manufacturing operations. Richmond vitreous china ware, for example, is fired in modern kilns at temperatures up to 2300°F. to give you a highly scratch-resistant surface that is actually comparable in hardness and durability to the natural sapphire. In Richmond cast-iron ware you get a ceramic glaze that's furnace-fused to the base for a permanent, impermeable bond and smooth glass-hard surface. Continuous quality control at all stages of manufacture assures the production of only top-grade fixtures.

Richmond fixtures comply with U. S. Government specifications WWP-541A, Federal specifications for land use of Army, Navy and Air Force installations and exceed the requirements of Commercial Standards CS20-49 and CS77-51.

Richmond plumbing fixtures are available in a wide range of sizes and modern styles, in famous "Whiter-White" or seven lovely pastel colors.

For long service life with minimum maintenance, it pays to specify Richmond.

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As long-lived as the building itself, a Terrazzo floor is young as a new idea. It's unequivocally healthy at all stages of a building's life. It paves the way to aseptic cleanliness in hospitals. Wanted in surgery, wanted wherever a smooth, unbroken surface is required, Terrazzo delivers an easy-to-clean floor that welcomes hard use. It repays architects' and builders' foresight with long life and low upkeep. If you're building or remodeling, investigate Terrazzo. Free AIA Kit upon request.

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City ..... Zone..... State.....

THE RECORD REPORTS

(*Continued from page 346*)

17–20 Annual meeting, National Association of Housing and Redevelopment Officials — Hotel Statler, Cleveland

17–21 The 43rd National Safety Congress and Exposition — Conrad Hilton, Morrison and La Salle Hotels, Chicago

18–20 Fourth Annual Conference for Architects; theme, "Integration of Contemporary Esthetics and Building Techniques," sponsored by the University of Illinois — Urbana, Ill.

19–21 Annual convention of the Architects Society of Ohio — Carter Hotel, Cleveland

20–21 Third Annual Convention, Architectural Woodwork Institute — La Salle Hotel, Chicago

24–26 Second annual motel show — Morrison Hotel, Chicago

24–26 Sixth National Conference on Standards, to be held under the joint sponsorship of the American Standards Association and the National Bureau of Standards — Sheraton-Park Hotel, Washington, D. C.

24–26 The 37th annual meeting of the American Standards Association — Sheraton-Park Hotel, Washington, D. C.

24–27 Annual convention, Institute of Traffic Engineers — William Penn Hotel, Pittsburgh

24–28 Convention of the American Society of Civil Engineers — Hotel Statler, New York City

26–28 The 24th Annual Meeting, Porcelain Enamel Institute — The Greenbrier, White Sulphur Springs, W. Va.

31ff Annual convention, Structural Clay Products Institute; until Nov. 2 — Greenbrier Hotel, White Sulphur Springs, W. Va.

31ff First National Electrical Exposition, sponsored by the National Electrical Contractors Association in connection with its 54th anniversary convention; until Nov. 2 — Waldorf-Astoria Hotel, New York City

November

2–4 Annual convention, Texas Society of Architects — Shamrock Hotel, Houston

2–5 World Symposium on Applied Solar Energy, sponsored by Asso-

(*Continued on page 354*)

For the sewing class that's a growing class . . .
SINGER Combination Sewing and Cutting Table!

Accommodates More Students!

Designed with the help of leading home economics supervisors, the new two-in-one SINGER* Sewing Table accommodates *four* students at the same time.

It holds any combination of 2 full-sized SINGER* Machines and provides working space for two more students. With complete sewing needs right at hand, students never have to wait for work space!

Fits more machines into limited space!

Now there's no need to waste space with *separate* machine cabinets and cutting tables. Machines lower into the SINGER Table . . . removable panels slip into place . . . and presto!

There's a smooth, continuous surface for pattern pinning and cutting! Students needn't shift from machines to cutting tables. Noise and confusion are eliminated . . . teaching is more *efficient*.

Has all these convenience features!

- Two handy drawers—plus two deep openings to accommodate all standard tote trays.
- Drop leaf for extra space. (Second leaf available for other end if desired.)
- Built-in knee levers.
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- Safety switch—cuts off power automatically when machines are lowered into table.
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- Table available in beautiful blond or dark wood.
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- Size—60" x 42" x 30" with 18" drop leaf.

Special school discount

with any full-sized SINGER heads you prefer —Straight-Needle, Slant-Needle* or Swing-Needle.*

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Please send folder giving details about Combination Sewing and Cutting Table, and showing suggested classroom layouts.

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THERE'S ONE NEAR YOUR SCHOOL

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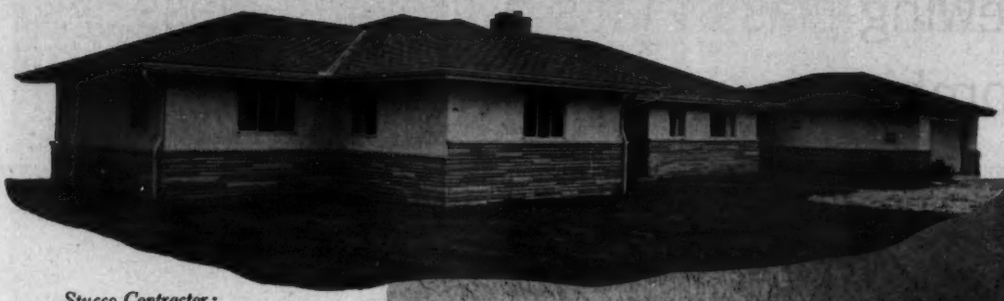

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The enduring attraction of stucco

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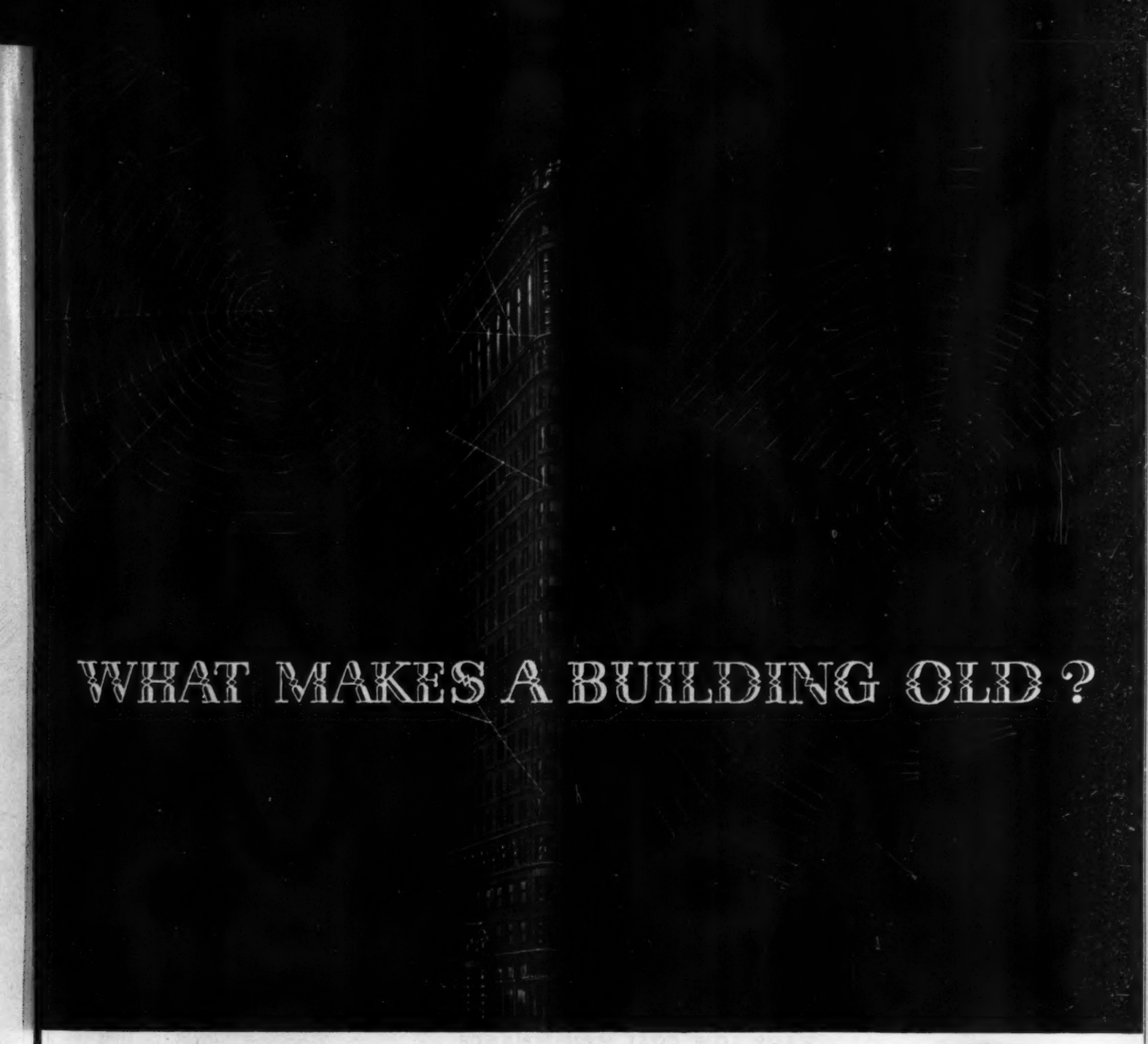

...and what keeps a building young?

What is it that keeps some buildings "young" . . . always with a waiting list and never a vacancy . . . while other structures half their age are regarded as old? You generally find the answer in a *management* that maintains the building properly . . . and behind that, an *architect* who appreciated the importance of designing for "perpetual youth."

Because the rest room is one place where a building is most likely to show its age, smart architects today plan this area with particular care. They specify off-the-floor plumbing fixtures in all major new buildings. These not only *look* modern . . . they make it easy to maintain hospital-like standards of cleanliness and sanitation. They facilitate redecoration, and give the widest latitude in future desired changes in the structure of floor or wall.

You will find also, in most such installations, that the fixtures are suspended on the ZURN SYSTEM®. The patented, engineered features of the ZURN SYSTEM makes installation easy, alignment simple, and support completely and permanently dependable. All of the stress is carried by the system . . . no stresses are transmitted to the wall. The best indication of how successfully the ZURN SYSTEM does its job is shown by the 800,000 individual fixtures currently supported on the ZURN SYSTEMS.

To help sell your clients on this modern mode in rest room design, write for our free booklet, "Behind Closed Doors." 110-3

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PLUMBING DIVISION

ERIE, PA., U.S.A.

The Zurn Zero Zone® is created by mounting off-the-floor plumbing fixtures on behind-the-wall ZURN SYSTEMS. This permits the highest degree of rest room sanitation to be attained and maintained. All major plumbing manufacturers make fixtures to fit this system.

See our catalog in Sweet's Architectural File and Industrial Construction File.

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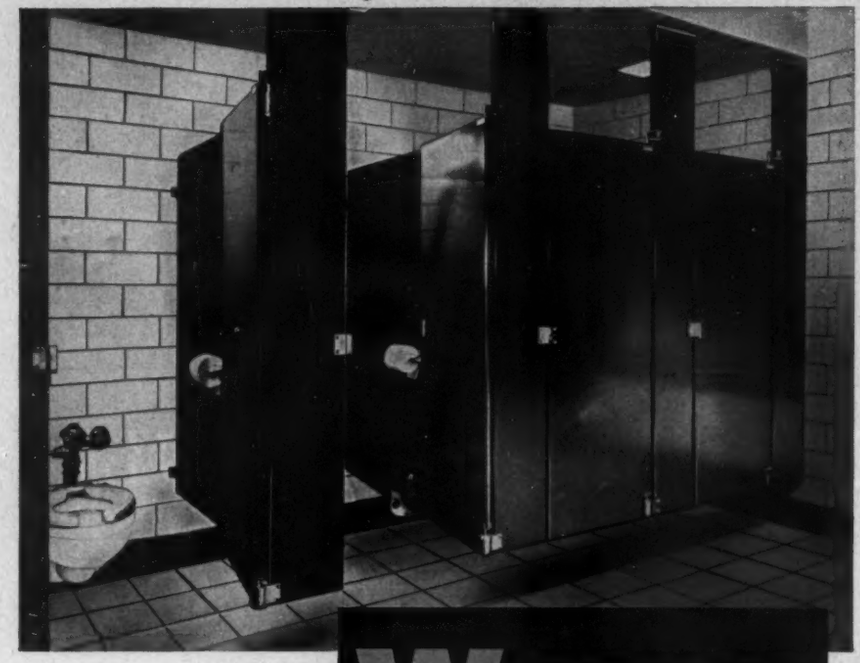
MODERN SCHOOL REST ROOM DESIGN

Gets Everything off the Floor...



American-Standard Wall-type Toilets carry out the off-the-floor design of Weisart Ceiling-hung compartments. The Zurn System, used to install the toilets in this photo, simplifies rest room layout and opens the way to savings in the overall cost of building.

WEISART COMPARTMENTS

- **FOR SANITATION**
- **FOR FINE APPEARANCE**
- **FOR LOW COST MAINTENANCE**

PARTICULARLY in schools where appearance, sanitation and ability to stand hard usage are vital, Weisart compartments are the logical choice. They have triple protection of (1) flush steel construction with edges locked and sealed, galvanized surface "smooth as glass" (2) Bonderized for additional corrosion resistance and positive adhesion of enamel (3) synthetic primer and enamel separately baked combining a highly protective surface with lustrous beauty in your choice of 24 colors. Ceiling-hung Weisart compartments leave floors clear for cleaning . . . cut maintenance. For detailed information write

HENRY WEIS MFG. CO., INC., *1003 Weisart Bldg., Elkhart, Indiana*

THE RECORD REPORTS

(*Continued from page 350*)

ciation for Applied Solar Energy under the leadership of Stanford Research Institute — Westward Ho Hotel, Phoenix, Ariz.

5–10 Annual convention, Society of Industrial Realtors — Hotel Biltmore, New York City

6–10 Annual convention, National Association of Real Estate Boards — New York City

7–11 First Mexican Congress of the Building Industry and Industrial Building Exhibit — Mexico City

7–11 National Hotel Exposition — Kingsbridge Armory, New York City

8–11 Annual meeting, American Council of Independent Laboratories, Inc. — Westward Ho Hotel, Phoenix, Ariz.

9–11 The 19th annual Time and Motion Study and Management Clinic sponsored by the Industrial Management Society — Hotel Sherman, Chicago

11–12 Secondary Schools and the Community: a seminar conference sponsored by the New England Regional Council, American Institute of Architects, in cooperation with the New England School Development Council, the Harvard Center for Field Studies in Education and the Boston Society of Architects — Cambridge, Mass.

11–13 National Conference on Community Development, sponsored by the Adult Education Association of the United States of America — Jefferson Hotel, St. Louis

13–15 Annual meeting, National Building Material Distributors Association — Sheraton Hotel, Chicago

13–18 Diamond Jubilee annual meeting, American Society of Mechanical Engineers — Chicago

14–16 West Coast Construction Surveyors Institute — Ambassador Hotel, Los Angeles

14–17 Second International Automation Exposition — Navy Pier, Chicago

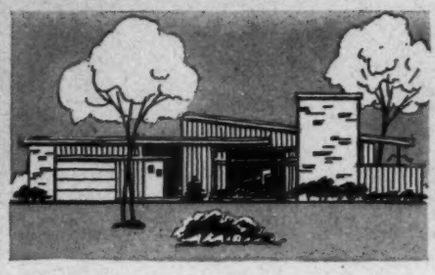
14–18 Chicago Exposition of Power and Mechanical Engineering, in conjunction with 75th anniversary meeting, American Society of Mechanical Engineers — Coliseum, Chicago

17 The A-Bomb and Industry — a Prescription for Survival; a con-

(*Continued on page 358*)

Any type home is obsolete

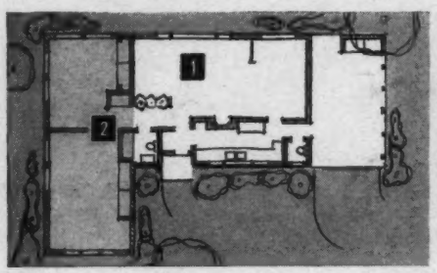
Designing ranch-type houses? New Honeywell *Packaged* Zone Control is practical if they're two-bedroom-and-up homes with over 800 square feet. Zone control *measures* comfort to exact needs of all occupants at all times.



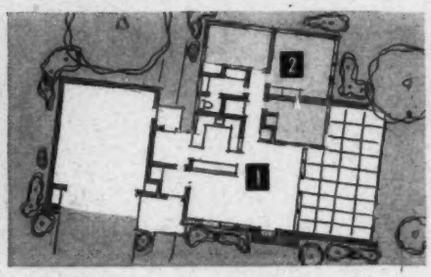
Designing contemporary homes? If you are, specify Honeywell Zone Control comfort. Large glass areas and open planning can cause excessive temperature variations, easily changed to *whole-house* comfort by the Honeywell system.

Designing split-levels? Bring ideal comfort to various activity zones with the new Honeywell Zone Control Package. Honeywell's use of standard components makes zoning easier, more effective, more economical than ever.

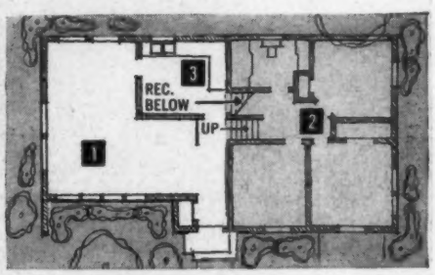
without the comfort of new



Zoned ranch house is *completely* comfortable with Honeywell Zone Control separating living-dining area (1) from sleeping area (2). Bedrooms are kept at lower temperatures ideal for comfortable sleeping.

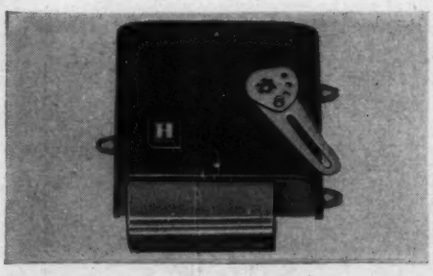


Contemporary house plan utilizes separate thermostats in living-dining zone (1) and sleeping zone (2) which create distinct comfort areas. Thermostat in Zone 1 compensates automatically for large glass areas and heat from fireplace.

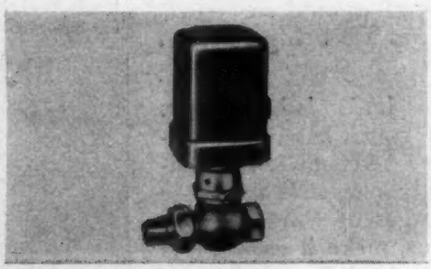


Split-level house has Honeywell Zone Control in (1) living-dining, (2) sleeping, and (3) recreation areas. Occupants receive exact comfort required, even in areas of intermittent use. Three thermostats are employed.

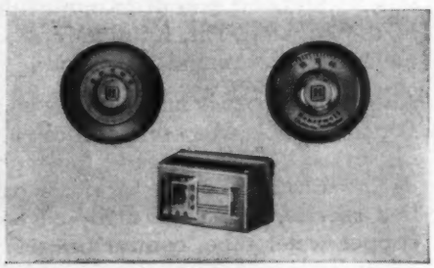
Honeywell Packaged Zone Control



New Honeywell damper actuator vastly improves forced air zoning—gives temperatures at proper levels in different activity areas. Provides true *modulating* control—delivers continuous flow of heating or cooling on demand. Noiseless; easy to install; will give years of trouble-free service. Economical, too.



Quiet, motorized valve makes it easy to zone forced hot water heating systems. Valve opens on demand from zone thermostat and at the same time starts the circulator, thus delivering heat to the zone. Versatile—works equally well on two-pipe steam systems. A low-voltage control. Easy to wire and install.

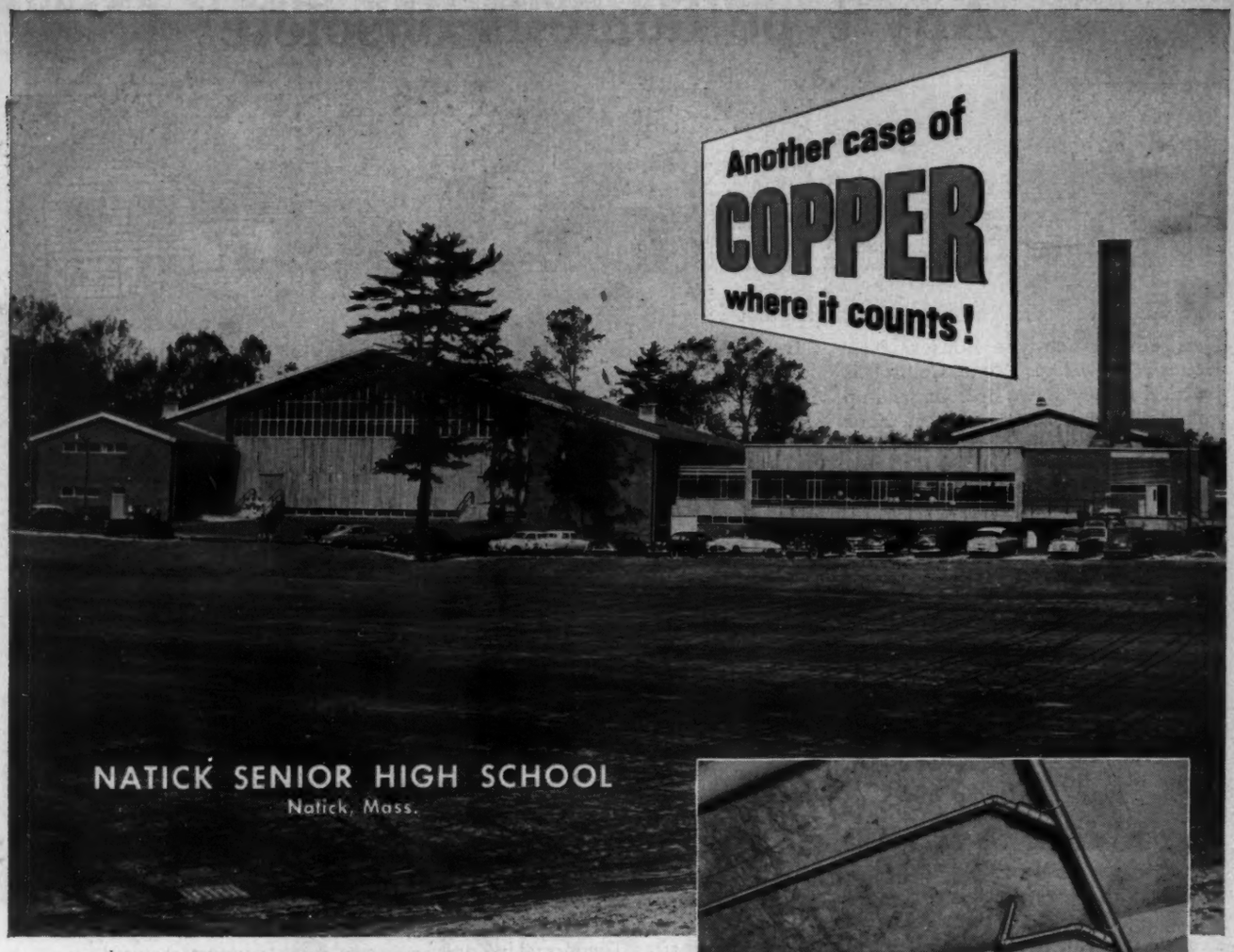


Three outstanding thermostat systems complete the package: (1) Electronic Moduflow, right, for major occupancy zone; (2) Clock Thermostat, center, in sleeping areas automatically lowers temperatures at night, raises them at morning; (3) Honeywell Round, left, perfect for zones of intermittent occupancy.

For complete information on the new Honeywell forced air zone control system, or on equipment for wet heat zoning, call your local Honeywell office. Or write Honeywell, Dept. AR-10-133, Minneapolis 8, Minn.

MINNEAPOLIS
Honeywell
Zone Control

For heating and cooling

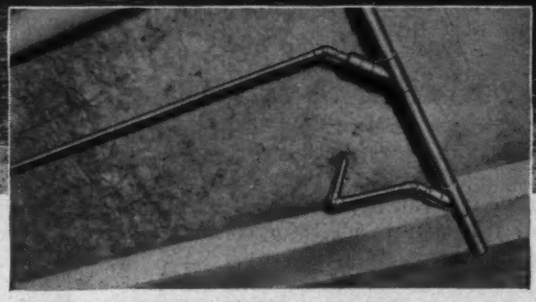


Architects: SHEPLEY, BULFINCH, RICHARDSON & ABBOTT and SMITH & SELLEW, Boston
Gen. Cont.: B. PERINI & SONS, Framingham, Mass.
Plumb. Cont.: C. H. CRONIN, Boston
Revere Dist.: CHARLES D. SHEEHY, INC., Boston

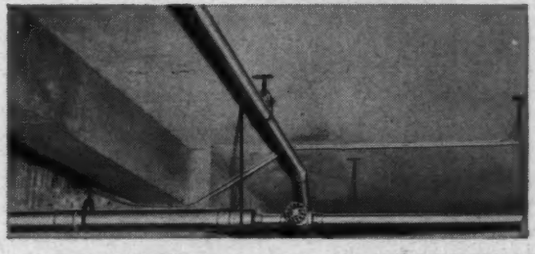
Boasting of ramps and half-flights of stairs, multi-unit construction for easy expandability and similar innovations, this $3,500,000 school is one of the most modern layouts in the country. Yet, its plumbing lines are being serviced by man's oldest metal . . . copper!

Although copper is man's oldest metal, it also is his newest. For it will help keep this school young as it has been keeping other buildings young for scores of centuries. Its enduring qualities outperform all other materials in water line service, while the many advantages of working with copper water tube, contractors tell us, make it easier, less costly, to install. There are fewer joints with Revere Copper Water Tube, and the joints that are necessary are made in a jiffy with fewer tools. They're tight, leak-free ones, too. And maintenance, a mighty important item in schools and similar buildings, is practically nil with non-rusting copper water tube on the job.

Keep out of trouble with copper. Specify Revere Copper Water Tube for radiant panel heating, hot and cold water lines, underground service lines, air conditioning and processing lines, waste lines and vent stacks. And if you have technical problems involving the use of Revere Copper Water Tube, one of our Technical Advisors will be glad to help.



23,969 LBS. of REVERE COPPER WATER TUBE were used for the plumbing lines in the Natick Senior High School, in sizes from ½" to 5". Installation would have been slower, more costly, if threaded pipe had been used in the close quarters shown in photo above. There are no wrench-room worries when you use Revere Copper Water Tube and solder fittings.



WITH NON-RUSTING Revere Copper Water Tube on the job there is no loss of flow or pressure, no allowance in pipe size required as would be the case with rustable pipe.

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for every type of installation

For unparalleled luxury, combined with utility and durability, no rubber tile flooring comes up to the standards set by Wright. In fact, many Wright floors installed over thirty years ago are as beautiful and serviceable today as they were then.

Oldest and most progressive name in its field, Wright Rubber Tile has exceptional uniformity of color, dimensions and physical characteristics. Its restful resilience... sound-softening effect... deep richness of color and pattern... ease and economy of maintenance...above all its superior resistance to wear and abrasion, make it ideal for virtually every type of installation.

...All in all, a perfect luxury-plus-utility flooring that you can select with confidence.

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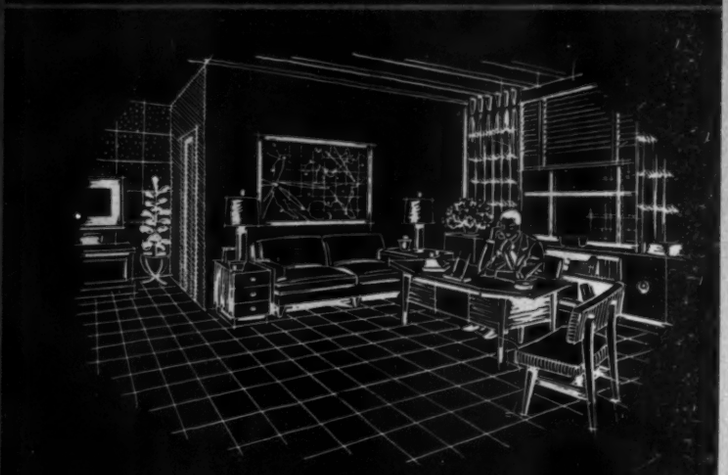
Division of Mastic Tile Corporation of America
Houston, Texas

FOR HOSPITALS



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WRIGHT Rubber Floor Tile

THE RECORD REPORTS

(*Continued from page 354*)

ference sponsored by Armour Research Foundation of Illinois Institute of Technology — Illinois Institute of Technology, Chicago

17–19 The 41st annual convention, Florida Association of Architects — Princess Issena Hotel, Daytona Beach, Fla.

23ff Built in Latin America; an exhibition of examples of 20th century Latin American architecture selected by Henry-Russell Hitchcock and photographed by Rosalie Thorne McKenna; until Feb. 20 — Museum of Modern Art, 11 W. 53rd St., New York City

28ff Ninth Air Conditioning and Refrigeration Exposition, sponsored by the Air Conditioning and Refrigeration Institute; until Dec. 1 — Auditorium, Atlantic City

28ff White House Conference on Education; until Dec. 1 — Washington, D. C.

30ff The 42nd annual convention, National Warm Air Heating and Air Conditioning Association; until Dec. 1 — Hotel Statler, New York City

December

1–3 The 51st annual meeting, American Society of Refrigerating Engineers — Traymore Hotel, Atlantic City, N. J.

6 The Ceiling Complex in Multi-Story Buildings; a correlation conference sponsored by the Building Research Advisory Board — Washington, D. C.

10–16 International Atomic Exposition — Public Auditorium, Cleveland

12–17 Nuclear Congress, sponsored by General Committee on Nuclear Engineering and Science of the Engineers Joint Council — Cleveland

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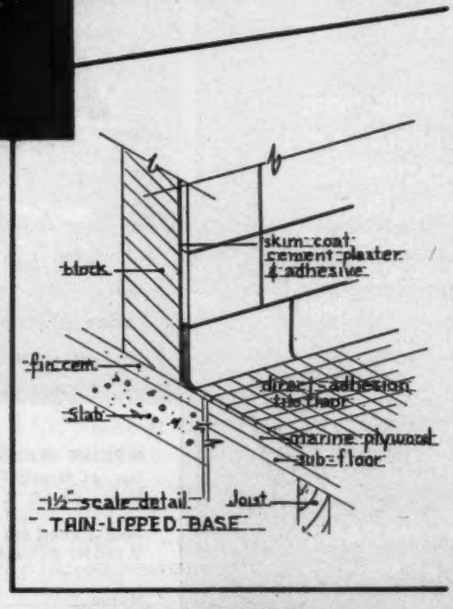

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OFFICE NOTES

Offices Opened

• Alford, Pearson, Humphries, Architects, a new firm composed of partners S. Allison Alford, A.I.A., William M. Pearson, A.I.A., and Charles E. Humphries, A.I.A., has opened offices at 201 Hill Building, Montgomery, Ala.

• Everett Eugene Butler, Architect, has announced the opening of his offices at 210 Miller Building, Columbia, Mo.

• Howard Grant, Architect, recently opened an office on Highway 61, Sikeston, Mo.

• James H. Livingston and Nathan K. Van Osdol have announced their association in the firm Livingston and Van Osdol Associates, Architects, at 507 E. Liberty St., Ann Arbor, Mich.

• Robert S. Oliver, A.I.A., recently announced the opening of offices at 916 F St., Marysville, Cal.

• John Jamieson White Jr., Edward H. Noakes and Donald J. Neubauer have announced the formation of a partnership to be known as White, Noakes & Neubauer, Architects and Engineers. The firm has offices at 1145 19th St., N. W., Washington, D. C.; 1073 W. Broad St., Falls Church, Va.; and 80 Broad St., New York, N. Y.

Firm Changes

• The firm of Clemmer, Horton & Rudisill has been dissolved. Robert L. Clem-

(*Continued on page 362*)

El Paso Natural Gas Co.,
El Paso, Texas

Architects: Carroll & Daeuble,
El Paso, Texas

Glazing by Pittsburgh Plate Glass Co.,
El Paso, Texas

Another decorative, translucent, Mississippi Glass pattern, Magnalite B is also used extensively for partitions.

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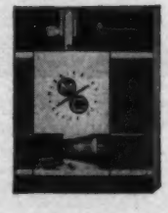

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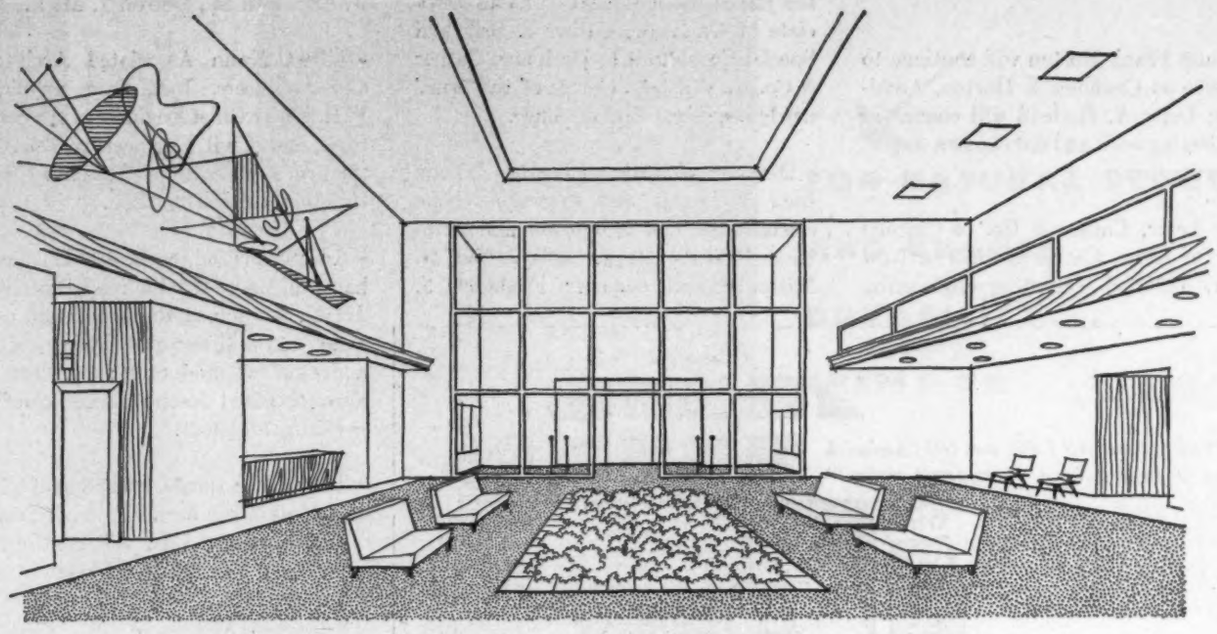

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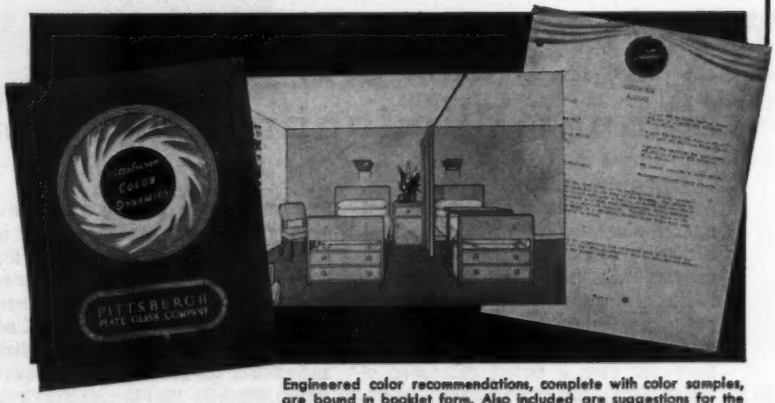

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Additional information on COLOR DYNAMICS in Sweet's Architectural File, Section 14/PI.

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(*Continued from page 358*)

mer and Frank Horton will continue to practice as Clemmer & Horton, Architects; Deitz A. Rudisill will engage in engineering work and direct a new manufacturing firm.

• De Leuw, Cather & Co. of Chicago and De Leuw, Cather & Brill of New York, affiliated consulting engineering firms, announce that Charles R. Waters has joined the organization as an Associate of De Leuw, Cather & Brill and Special Consultant to De Leuw, Cather & Co. He will take charge of the firms' newly organized Buffalo office.

• Directors of Harley, Ellington & Day, Inc., Architects and Engineers, have elected three new vice presidents: architects Paul B. Brown and Alfred H. Mitschke and engineer Frederick J. Hildebrandt. The firm is located at 153 E. Elizabeth St., Detroit 1, Mich.

• Albert Kahn Associated Architects and Engineers, Inc., have appointed P. B. Kirby Chief Engineer of the Structural and Civil Engineering Division; the firm's offices are at 345 New Center Building, Detroit 2, Mich.

• Kelly & Gruzen, Architects-Engineers, have announced that Laurence Scacchetti, A.I.A., has joined the firm as an associate, and will serve as office manager and chief of production; the firm has also appointed Joseph Greene chief supervising architect.

• The architectural partnership of Kirby and Mulvin has been dissolved. Donald Beach Kirby, A.I.A., will continue to practice at the firm's old address, 109 Stevenson St., San Francisco, Cal. Thomas B. Mulvin, A.I.A., joins the firm Gromme, Mulvin & Priestly, P. O. Box 654, Kentfield, Cal.

• I. Wm. Ricciuti, A.I.A., announces that J. Buchanan Blitch, A.I.A., has been made a partner of Ricciuti Associates, Architects-Engineers, 302 Q & C Building, New Orleans, La.

• The firm of Seelye Stevenson Value & Knecht announces that Mr. Jack L. Staunton, Chief Sanitary, Hydraulic and Petroleum Engineer has been made an Associate of the firm.

New Addresses

Charles Dunwoody Strong, Architect, 933 Sherman St., Denver 3, Colo.

John S. Findlay, Architect, 6276 Grand Vista Ave., Cincinnati 13, Ohio.

Ernest J. Haberstroh, A.I.A., 836 Elm St., Reading, Pa.

Otto J. Sambach and Warren A. Sambach, Consulting Engineers, 216–22 Jamaica Ave., Queens Village 28, N. Y.

Smithey & Boynton, Architects and Engineers, 319 McClanahan St., S. W., Roanoke, Va.

Vonnegut, Wright & Porteous, Inc., 1537 Central Ave., Indianapolis 2, Ind.

CORRECTION

The building shown in the photograph on page 179 of the September 1955 issue of the RECORD is the Arts and Crafts Building of the Helsingborg exhibition, not, as the caption erroneously stated, the Electrical Building.

(*More news on page 366*)

"Yuh got me! All I did was tell Chadwick we're putting in a Monoxivent system!"

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Ask any garage owner or service department manager what features he wants in an exhaust eliminating system and chances are he'll come up with a list that goes something like this . . . reasonable price, low installation cost, economical operation, time-saving convenience, and long, trouble-free life. And there you have a perfect description of Monoxivent Exhaust Eliminating Fixtures.

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5-105 General Motors Building
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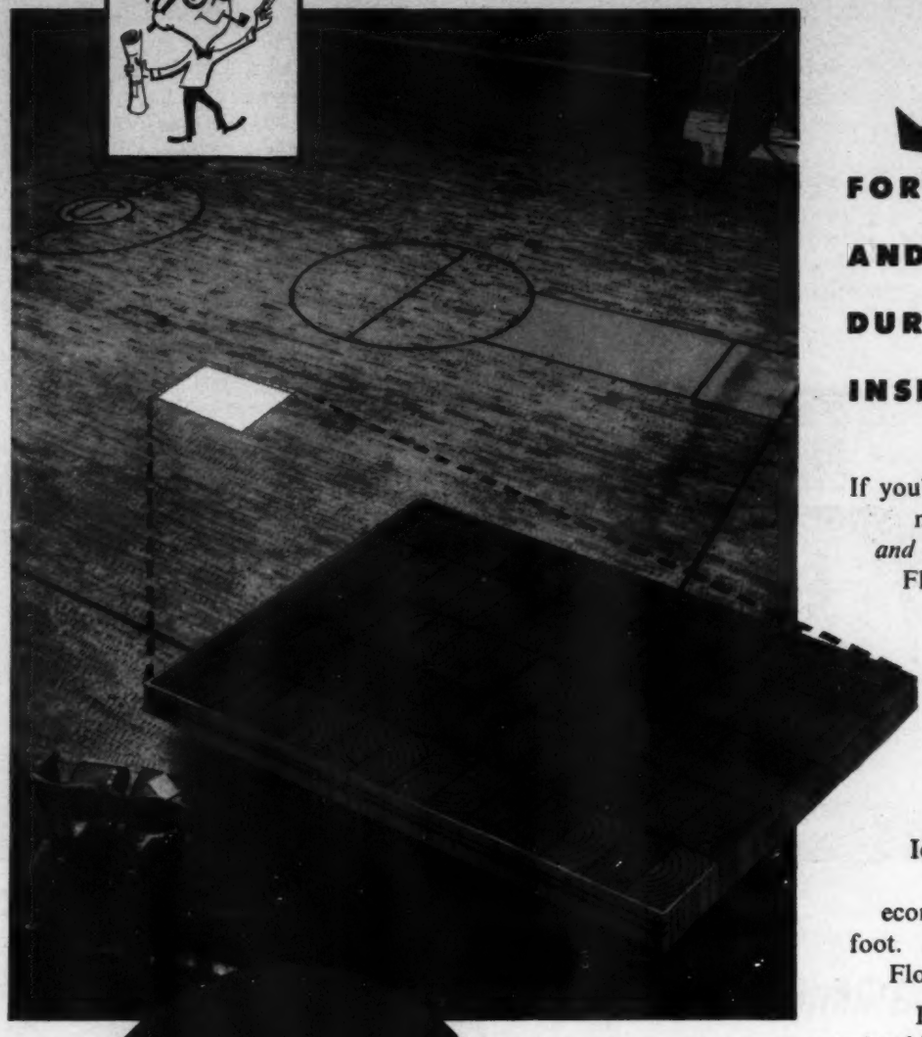
Take a tip from the guy who knows:



Canisius High School
Arch.—Albert A. Rumschik
Buffalo, New York

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If you're looking for a school flooring material that offers both beauty *and* durability, then *insist* on Kreolite Flexible Strip End Grain Wood Block Flooring!

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Rust Craft Publishers' combined new plant and office was designed by Graham, Anderson, Probst and White, Chicago. *General Contractor:* Aberthaw Construction Company, Inc., Boston.

ARCHITECTURE OF PRINTING PLANT AND OFFICE HARMONIZES WITH NEW ENGLAND SETTING

The white-columned portico and colonial clock tower of Rust Craft Publishers' combined new office and plant at Dedham, Mass., are in keeping with the soundest traditions of New England architecture.

The $3 million building, standing on a 56-acre site, is the home of one of the largest publishers of greeting cards in the country. The modern one-story plant covers 8 acres, and adjoining it at the front is the red-brick two-story office building. A nearby railroad station, "Rust Craft," was especially provided by the railroad to supply both passenger and freight service to the plant.

In keeping with the care with which the building was designed was the selection of materials for both beauty and permanence. Except for the wall-bearing brick piers of the main portion of the office building, the entire framework is of Bethlehem structural shapes. And Bethlehem Open-Web Steel Joists were used in the floor and roof structures of the two-story office building.

The advantages of using Bethlehem Joists were many. They contributed to the strength and rigidity of the finished building, providing a non-warping construction which keeps future maintenance to an economical minimum.

Bethlehem Open-Web Steel Joists reached the job site fully fabricated, marked and ready for placing. They needed only field-welding to secure them in position. Pipes and conduits were run through the open webs, and installation of lighting fixtures and acoustical ceilings was greatly simplified.

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On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

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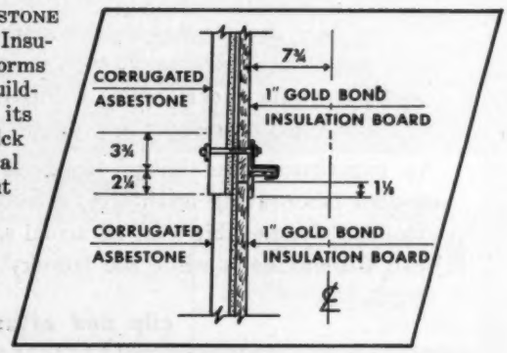
How many uses can *you* think of for Gold Bond CORRUGATED ASBESTONE? Wherever you use it, you're getting lifetime strength and good looks. For details, write Dept. AR-105, National Gypsum Company, P. O. Box 5257-B, New Orleans 15, La.



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(*Continued from page 362*)

NEW WING FOR OFFICES WINS MINNESOTA AWARD

Built for the Andersen Corporation in Bayport, Minn., this office wing brought architect Brooks Cavin, of St. Paul, an honor award at the 1954 annual convention of the Minnesota Society of Architects.

Glass dome with cove lighting covers indoor patio used as display area for owner's manufactured windows. Above: the dome is lighted at night

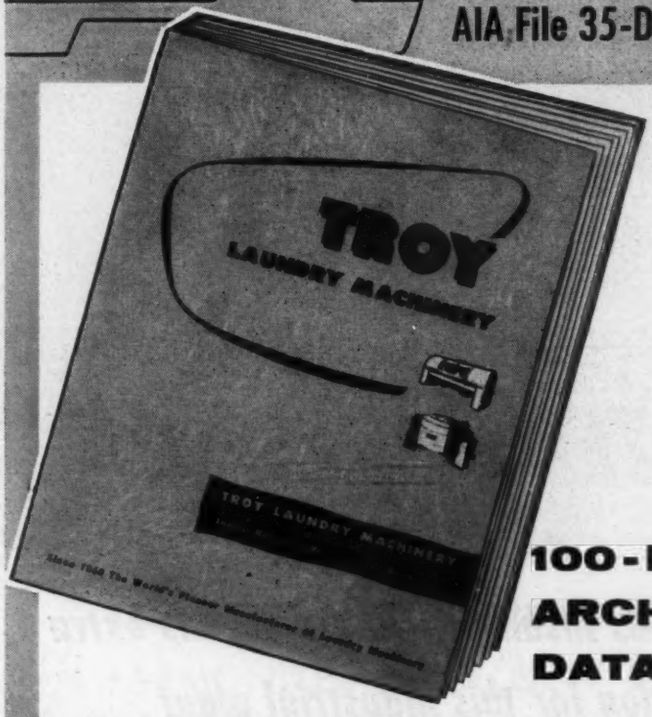
Designed to play two roles, the office not only provides the additional office space which the firm required, but serves in addition as an exhibition of the owner's product, manufactured window units, in use.

The building's glass dome covers an indoor garden, which is intended to give a "residential" appearance to the area. Natural lighting has been supplemented by spotlights and a cove light around the edge of the dome, so that that space might look like a "sunlight-flooded garden."

(*More news on page 370*)

Ceiling over general office area carries panel heating and cooling, acoustic control and illumination

AIA File 35-D-1, 2, 3



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the complete LAUNDRY planning guide

If your firm designs hospitals, hotels or institutions that have their own laundries, send for this book. It shows machine dimensions, steam and electrical requirements, typical floor plans . . . and contains many other helps.

An experience-tested layout based on direct work flow, plus modern labor-saving machinery, gives your client the most efficient laundry possible — at an actual savings in floor space. So send for this book while the laundry is in the early planning stages.

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Float Thermostatic Steam Traps

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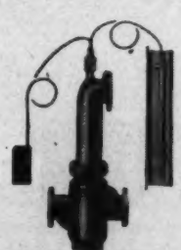
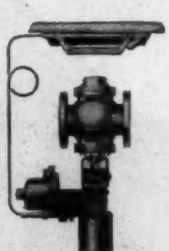


Modulating Controls for hot water and radiant heating



Modulating Controls for steam heating

Type AO Controls for hot water and radiant heating

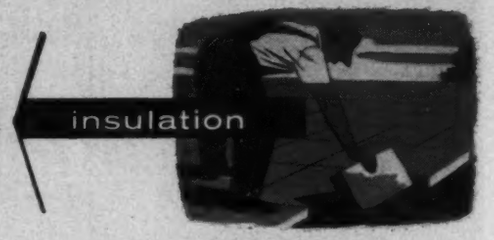
SARCO-fin

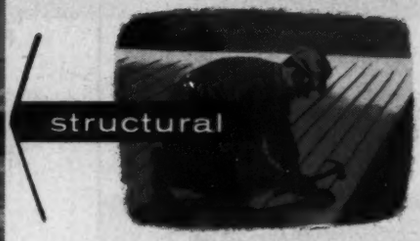
finned-tube and baseboard radiation

2132-B

Tectum Method saves money

1 operation takes the place of 3





Acoustics are near perfect in the Student Activities Building, University of Maryland, insured by a combined deck and ceiling of 2" Tectum plank nailed to steel purlins.
Architects: Hall, Border and Donaldson, Baltimore.
Contractor: Baltimore Contractors, Inc.
Erector: Irvin Prickett & Sons, Inc., Washington, D.C.

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Now! The Tectum Method offers you an easy way to cut construction costs *without sacrificing quality or workmanship.* Tectum is more than a product—it's a *method!* In fact, Tectum will actually *improve* the quality of your job. There's a simple explanation for the superiority of Tectum. It does 3 jobs in 1. *First,* it's a roof deck; *second,* it's insulation; and, *third,* Tectum is acoustical. Not only is Tectum time-and-labor-saving, but Tectum's light weight (20 to 24 lbs. per cubic foot) lets you use lighter, more economical spans.

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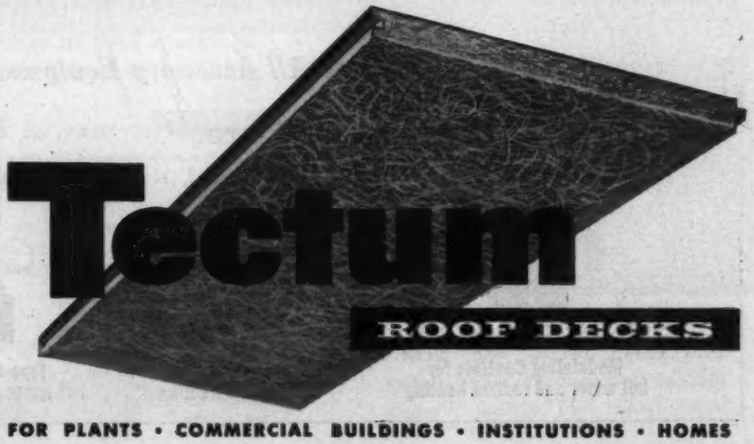
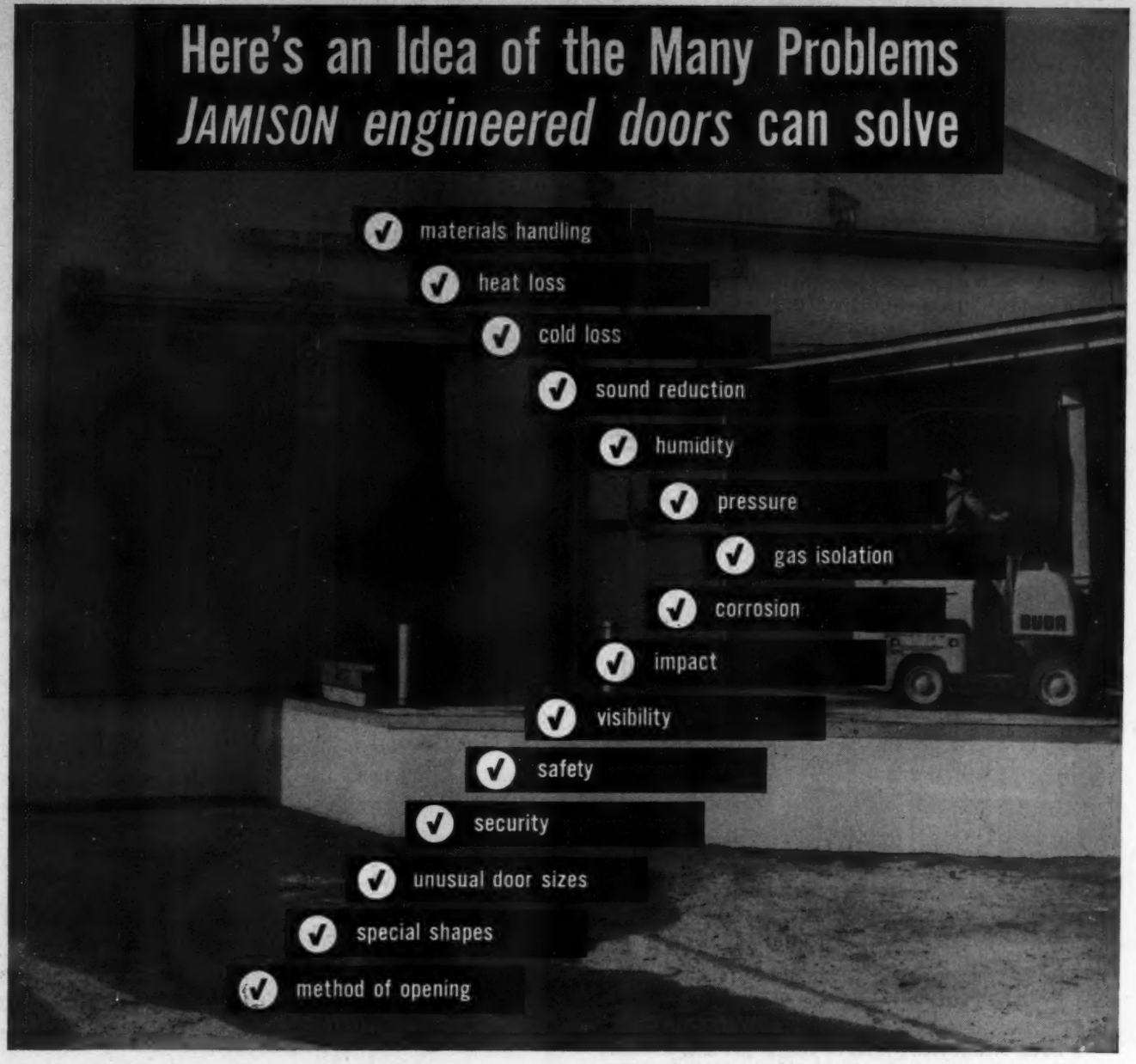
Firm _____

City _____ *Zone* _____ *State* _____



FOR PLANTS • COMMERCIAL BUILDINGS • INSTITUTIONS • HOMES



Whenever a door must meet unusual or exacting requirements, Jamison has the effective, trouble-saving solution. Jamison now offers industry and architects an engineered door service for all kinds of problems. This means greater freedom in plant design . . . greater efficiency in plant operation. Whatever the problem, Jamison brings to it solution-minded research, engineering and production . . . plus more than 50 years' experience in developing cold storage and other special-purpose doors. Send the coupon now for specific information.

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engineered doors

For 50 years the leading builder of cold storage doors

ENGINEERED DOOR DIVISION
JAMISON Cold Storage DOOR COMPANY
HAGERSTOWN, MD., U.S.A.

Without obligation, I'd like your recommendations on a door that must_____

_____

_____

Name_____ Title_____

Company_____

Address_____

(*Continued from page 366*)

FOR TRUCKS AND DRIVERS: A HAVEN IN ILLINOIS

Truck Haven, built by the Cities Service Company, provides 34 gas pumps to refuel the trucks stopping by, and an air conditioned restaurant to perform the same service for the trucks' drivers.

Above: night view of Truck Haven at Cicero, Ill., designed for Cities Service Company by Henry Dreyfuss

Located in Cicero, Ill., facilities at the truck stop include a dormitory with 36 bunks on the second floor; this room is sound-proofed. Also on the second floor is a lounge with television, radio and card tables, as well as desks where the drivers can plot their routes

Truck Haven was planned by industrial designer Henry Dreyfuss.

(*More news on page 374*)

Mo-Sai®

TODAY'S FACING for the FUTURE

● Northland Regional Shopping Center, Detroit
Architects & Engineers: Victor Gruen Associates
General Contractors: Bryant & Detwiler Co.
Mo-Sai by The Mabie-Bell Co., Greensboro, N. C.

Mo-Sai Precast Facing forms an integral part of J. L. Hudson Company's spectacular new Northland Regional Shopping Center, Detroit, again demonstrating its versatility.

With Mo-Sai, architects gain greater design flexibility through a virtually unlimited range of shapes and colors, and in sizes limited only by the requirements of the job. Its lasting beauty and durability in delicate pierced grille work, massive slabs, or difficult shapes incorporating soffits and returns, make it today's most versatile masonry facing.

Write today to the nearest Mo-Sai Associate listed below for samples and a complete product description and analysis, or for assistance from an experienced Mo-Sai engineer.

MO-SAI ASSOCIATES, INC. Members, The Producers' Council

California	Los Angeles 11	C. D. Wailes Co.
	South San Francisco	P. Grassi-American Terrazzo Co.
Connecticut	New Haven 3	The Dextone Co.
Massachusetts	Allston 34	Cambridge Cement Stone Co.
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North Carolina	Greensboro	The Mabie-Bell Co.
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Utah	Salt Lake City 6	Otto Bushner & Co.
Virginia	Richmond 7	Economy Cast Stone Co.
Washington	Seattle 7	Olympian Stone Co.
Wisconsin	Oshkosh	Badger Concrete Co.
Canada	Toronto 13	Toronto Cast Stone Co.

SWEET'S FILE 3d/Mos

Above: three of the 16 gas pumps on the station side of the highway; 18 others are placed on the other side of the road. Below: truckers at rest, or about to be, in the 36-bunk dormitory over the service station

Cat. No.	Lamps	Ballast	Box Dimensions Width - Length - Depth	Approx. Weight
FL-636	4-40 W	Rapid Start	25" x 49" x 5"	75#

TO ARCHITECTS AND ENGINEERS

who have the light touch

● From our point of view, it is easy to determine whether an architect or engineer has the "light touch".

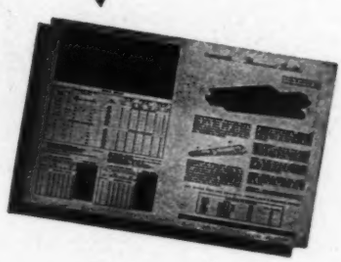
If he has developed a sort of "sixth sense" about the type of lighting he needs on every job he does . . . if he considers lighting one of the most important requirements of every project he works on — then he has the "light touch" — the ability to work with "light" as an artist works with his brush. He can use it to "create special effects" . . . as a "background" . . . as a "basic need" . . . or in many other ways.

To the architect and engineer who have this special feeling for lighting, KAYLINE offers a "tailormade" service. We do not offer you the largest selection on earth, nor the very lowest prices, but we will give you the right fixtures for the purpose because we are craftsmen in the field of lighting fixtures. We know the value of light both to sight . . . and to beauty . . . and we create accordingly.

Our fixtures are designed to meet the highest standards of lighting experts . . . accurately assembled . . . carefully tested at the factory . . . easy to install — to serve the needs of all, who like ourselves, believe in the importance of good lighting.

If this dedication to product and service is the kind you appreciate, why not get acquainted with KAYLINE by sending for its new catalog today — it makes a real contribution to the "light touch".

EVEN OUR CATALOG IS DIFFERENT



● Kayline's 74-page Catalog No. 55 not only shows the complete line of fluorescent, incandescent and slimline fixtures but gives information and charts on footcandles of light, light patterns, installation suggestions and other important data. Get a copy for yourself AND your specification writer. Send your request today.

KAYLINE

THE ONE SOURCE LIGHTING LINE

THE KAYLINE COMPANY

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Manufacturers Since 1895

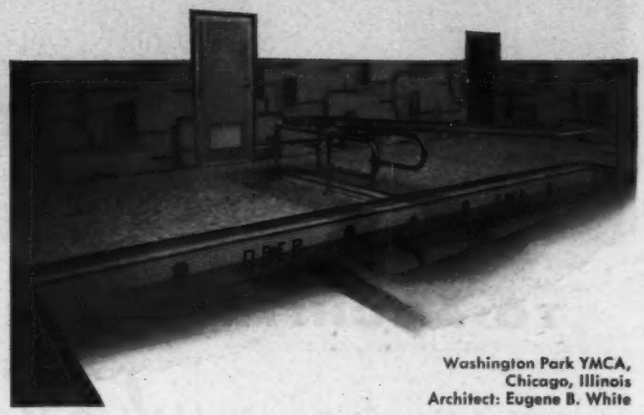
Dept. AR

swimming pool details by *Suntile*

Suntile offers you all the time-proved advantages of ceramic tile for swimming pools—*plus* fresh design quality.

You'll find that Suntile's wide range of colors, textures and sizes provides unusual latitude in creating patterns, murals and other decorative effects in tile.

The smaller sizes and durable, slip-proof matt-finish of Suntile Satinized Ceramics make them especially appropriate for pools.



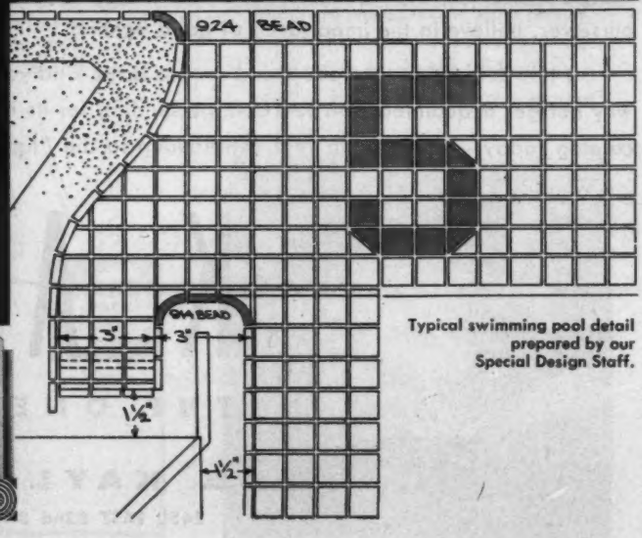
Washington Park YMCA,
Chicago, Illinois
Architect: Eugene B. White

Northeastern Branch YMCA-YWCA,
Norwood, Ohio
Architects: Patter, Tyler & Martin

ready to serve you...

OUR SPECIAL DESIGN STAFF

Our trained ceramic designers, headed by Harry Macke, can convert your tile design ideas into working drawings for the tilesetter, or if you prefer they will submit design suggestions for any area. There's no charge for this service. Just send us sketches, plans or elevations, and a brief description of your tile requirements.



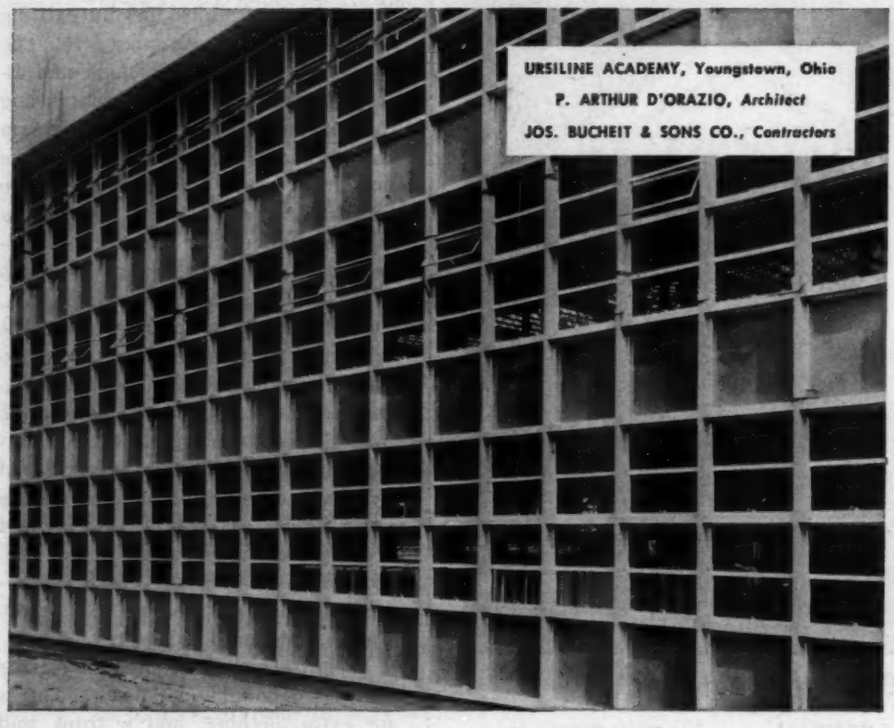
Typical swimming pool detail prepared by our Special Design Staff.

the **CAMBRIDGE TILE** *mfg. co.*

P. O. Box 71, Cincinnati 15, Ohio

NOTRE DAME HIGH SCHOOL, Detroit, Michigan
WALTER J. ROZYCKI, *Architect*
KREIGHOFF CO., *Contractors*

THE DYNAMIC LOOK...



URSILINE ACADEMY, Youngstown, Ohio
P. ARTHUR D'ORAZIO, *Architect*
JOS. BUCHEIT & SONS CO., *Contractors*

with *Versatile* VAMPCO aluminum Window Walls

These beautiful new school buildings are fine examples of how VAMPCO's unusual versatility provides the "Dynamic Look" that is so modern and inviting. Regardless of size or style of design, school architects everywhere are turning to VAMPCO's wide range of Aluminum Window Wall Sections for extra strength, durability and beauty at low cost! Find out how VAMPCO's special designing service can help you solve your lighting and ventilating problems most economically and efficiently . . . mail coupon TODAY!

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☐ Send 40-page Industrial-Institutional Window Catalog.
☐ Send Light Construction Aluminum Window Catalog.

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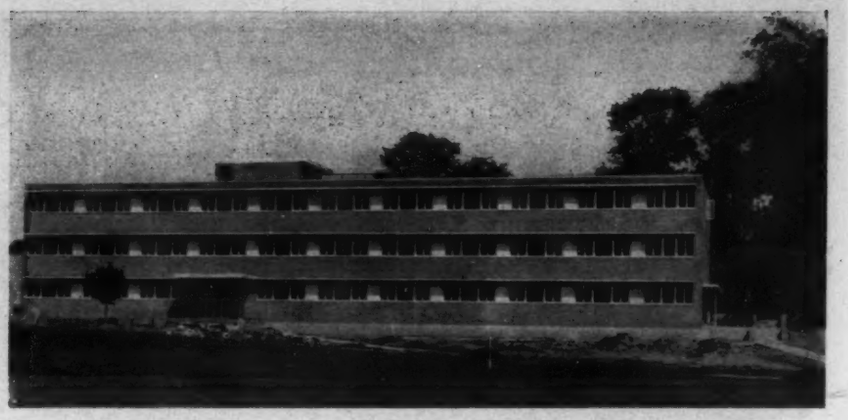
CITY.....ZONE.....STATE.....

(*Continued from page 370*)

AN OLD VIRGINIA CAMPUS TURNS TO MODERN DESIGN

The new dormitory opened this fall at Hollins College in Virginia is the first building on the campus of that small but old (since 1842) and conservative women's college to be "contemporary" in architectural style. It is explained that "since this building is not part of



any other building group, it has been done in a contemporary manner because it was not felt to be necessary that it harmonize with the architecture of the other college buildings, some of which are quite old and most of which have a colonial or semi-classic character." The new library at Hollins, now under construction, will also be contemporary in character. Frantz & Addkison of Roanoke are architects for both buildings.

The site for the building is uniformly sloping ground which had an existing approach drive at an upper level. The structure is three stories high and L-shaped, with its major axis paralleling contours and its minor axis extending up the hillside. The longer wing of the building contains the majority of the bedrooms, most of which overlook a meadow and rolling hills in the foreground and the Appalachian Mountains in the distance. The other wing of the L, turned toward the upper level and the driveway, permits vehicular access to the building and adjacent parking area. Separation of reception and social areas from the bedroom areas, an important factor in a girls' dormitory, was achieved by placing the reception room on the upper level at the end of one wing and keeping student entrances to the bedroom wing on a lower level midway between ground and second floor levels. There are two outdoor terraces.

Facilities include a sundeck on the roof of the building, large storage areas for extra clothing, and a trunk and laundry room in the basement. A new roadway, parking lot and connecting walkways to other campus buildings have been planned for most efficient access. Exteriors are brick with limestone trim; overhangs on the west façade (view in photo) will shield the wide windows.

The building will accommodate 82 girls in single and double bedrooms and cost, with built-in furniture in bedrooms, about $328,000.

(*More news on page 378*)

SMITHSONIAN INSTITUTION

ARTS AND INDUSTRIES BUILDING
Washington, D.C.

6 Balanced Doors in the entrances to Smithsonian Institution.

more.... Ellison doors

The Door that lets TRAFFIC through QUICKLY

Ellison

ELLISON BRONZE CO.
Jamestown, New York

representatives in 73 principal cities in the United States and Canada

the BALANCED DOOR

Figure 1. 1178-ton steel framework *for new Ainsley Building, Miami, Florida. Design engineers: Oboler and Clarke, Miami Beach. Steel Fabricator and erector: Ludman Steel Company. Architect: Morris Lapidus, New York and Miami Beach. General Contractor: Robert L. Turchin, Inc. Miami Beach.*

WELDED STRUCTURAL DESIGN SAVES STEEL... CUTS COST ON MULTI-STORY FRAMEWORK

AN estimated 120 tons of steel has been saved through welded design in the construction of this 14 story framework. This building, 140 feet across the front and 90 feet on the sides, is considered to be the largest all-welded multi-story structure in Florida.

Designed to withstand 50 pounds per square foot of hurricane winds, beams have semi-rigid end connections with top plates field butt welded to columns and welded to the top flanges of the beams.

The welding crew of nine men worked just behind the steel erectors. Both shop prefabrication and field erection were welded with Lincoln "Fleetweld 5" for quality, high strength connections in flat and vertical positions. Only ten weeks were required to complete the framework.

WRITE FOR INFORMATION

Studies in Structural Arc Welding available to architects and engineers on request. Write on your letterhead.

SIMPLIFIES ERECTION

Figure 2. Close-up *of connections between beams and column reveals how continuity of section is achieved through web stiffeners on column. Shop welded seat angles take shear loads.*

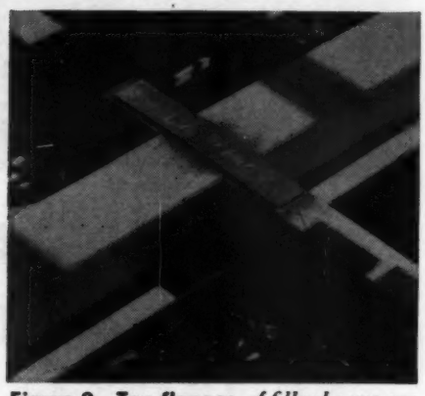


Figure 3. Top flanges *of filler beams are connected by strap plates over the girder, while lower flanges are butt welded to the web on both sides. Wide flange structurals are used throughout.*

Figure 4. "Shield-Arc" SA-200 *welder handles on-the-job repairs and construction in less time . . . with less cost. Broad current range from 40 to 250 amps.*

THE LINCOLN ELECTRIC COMPANY

Dept. 2603

CLEVELAND 17, OHIO

THE WORLD'S LARGEST MANUFACTURER OF ARC WELDING EQUIPMENT

Avoid overtime with the new Ozalid Streamliner 400—

Detail drawings that differ for various production departments and processing stages... partial tracings for subcontractors and suppliers... pile up the work load for any drafting staff, and often result in overtime, missed deadlines.

With the new Ozalid Streamliner 400, you make duplicate originals of your tracings; and add changes or details on the duplicate originals without doing over basic drawings ...make Ozalid prints, save drafting time and avoid overtime!

This new Streamliner 400 handles sheet or roll stock up to 42 inches, has synchronized printing and developing at speeds up to 24 feet per minute... turns out prints for less than 1½¢ per square foot. Its low price makes it a big economy in any drafting room.

The Streamliner 400 copies anything drawn, typed, written or printed on any translucent original; and prints on a wide variety of sensitized materials—easily, quickly, cheaply. Ozalid whiteprints are delivered dry, exact in size, clear and legible. Even a large print is ready in less than a minute.

Find out how Ozalid's Streamliner 400 can save drafting time and cut print costs in your department. Call any Ozalid distributor (*see phone book*) and ask for a demonstration. Or write 326 Ozaway, Johnson City, N. Y. In Canada, Hughes Owens Co., Ltd., Montreal.

OZALID—A Division of General Aniline & Film Corporation • *From Research to Reality!*

The new low cost STREAMLINER *400 prints on sheet or roll stock... is accurate, fast, convenient...*

OZALID

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IN A BETTER JOB OF FLOOR LAYING, CHALKBOARD INSTALLATION OR ACOUSTICAL SUSPENSION

It's the LOXIT "BIG 3" *systems*

LOXIT CHALKBOARD SYSTEM

This is a COMPLETE system. It provides the answers to all your chalkboard, tackboard and trim problems . . . LOXIT Rite Green and Darkrite Green Composition Chalkboards, PETRALOX Cement-Asbestos Chalkboards and PORCELOX Porcelain Steel Chalkboards as well as completely trimmed chalkboards and tackboards ready to hang . . . LOXIKORK Tackboards . . . LOXIT TRU-SNAP All-Aluminum Trim for both plastered-in and surface-applied installations . . . Sliding Boards, Trophy Cases, Bulletin Boards—a complete package.

LOXIT VICTORY ACOUSTICAL SYSTEM

The "XYZ" of dependable acoustical suspension systems. Type "X" Regular—to be used when furring channels serve as the supporting structural members for the suspension system. Type "Y" Surface Applied—to be used when no suspension is required. Type "Z" combines Types "X" and "Y" to meet special conditions.

LOXIT FLOOR LAYING SYSTEM

A simple and practical mechanical system which solves the problem of wood floors laid on concrete slabs. The flooring is laid in the same way that a nailed floor would be laid, but instead of using nails to fasten the flooring, a cleverly designed metal clip is used in combination with a metal channel. The clips are slotted to adjust themselves automatically to the tongue and groove of the flooring. No wood sleepers. No wood subfloor. No adhesives. No nails.

LOXIT LOXIT LOXIT

• Simple engineering principles can make a world of difference in your wood floor jobs on concrete slabs, chalkboard and tackboard installations or acoustical tile suspension. This "special ingredient" in which everything locks together—LOXIT—is the simple engineering principle in the three BIG Loxit Systems. The Loxit Systems simplify design and construction problems, meet unusual conditions, assure permanent beauty and years of trouble free service.

Literature, catalogs and samples are available. Write today.

CONSULT YOUR ARCHITECT

LOXIT SYSTEMS, INC. 1217 W. WASHINGTON BOULEVARD, CHICAGO 7, ILLINOIS

THE RECORD REPORTS

(*Continued from page 374*)

NEW SPEAKMAN SHOWROOM IS OPEN IN WILMINGTON

The 86-year-old plumbing and heating supplies firm of Speakman Company has erected this new headquarters for its Wholesale Division at 301 East 30th Street in Wilmington, Del. The new facilities, for which Stanhope and Manning of Wilmington were architects and Robert P. Schoenijahn, also of Wilmington, the engineer, cost approximately $600,000.

The building, on a suburban site, has three main areas — showroom, office and warehouse with counter service and display facilities. The client's major requirement was flexibility, particularly to allow for versatility of displays and display techniques.

The showroom proper, which has 2100 sq ft of floor area, is equipped with specially designed display fixtures for each of the major product lines to be shown; in most cases the display fixtures themselves are movable, so that not only are the models on display easily replaceable but the display areas themselves can be rearranged at will.

The warehouse, with 15,300 sq ft, has shipping and receiving facilities and a 170-ft-long loading dock to be used for pick-up counter sales as well as to service the warehouse. Two sections of steel mezzanine decks, each 28 ft wide and nearly 100 ft long provide nearly 6000 sq ft of additional storage.

One of two main entrances to the building leads to the reception and office area, which has diffused lighting and year-round air conditioning. The other main entrance provides "counter service" — incorporating numerous facilities for customer convenience and comfort — near the equipment display areas.

Amtico *PERMALIFE* Vinyl Flooring...

It's all-Vinyl... colors go thru and thru!

Amtico PERMALIFE VINYL FLOORING

- Needs less care than any other flooring
- Permalife... takes hardest wear for years
- Flexible, resilient, quiet
- Defies grease and acids
- Will not crack or tear
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Available in Terrazzo and Mosaic Designs, Plain and Marbleized Colors (In tile and sheet form)

The World's Largest Producer of Rubber Flooring

AMERICAN BILTRITE RUBBER COMPANY TRENTON 2, NEW JERSEY

In Canada—American Biltrite Rubber Co. (Canada) Ltd., Sherbrooke, Que.

Want Samples?

Amtico, Dep't AR-5, Trenton 2, N.J.
Send samples and complete information about Amtico Permalife Vinyl Flooring to:

NAME_____
FIRM_____
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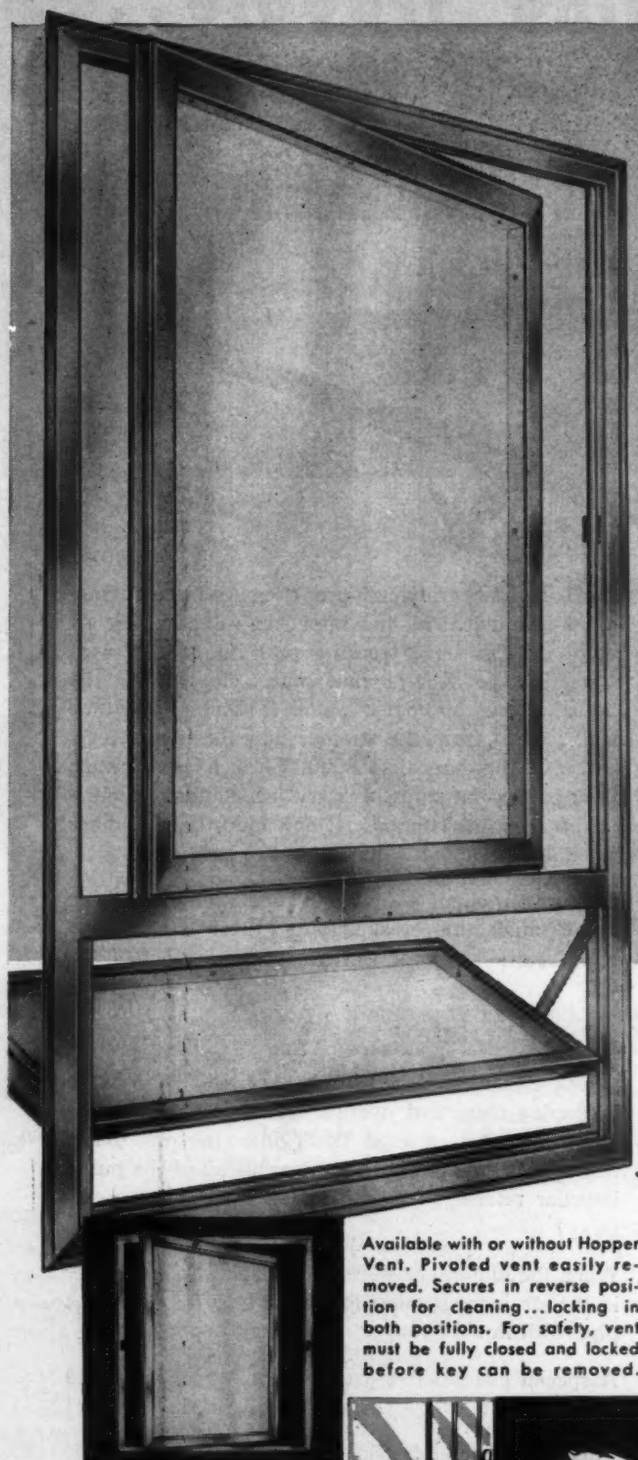
CITY_____ STATE_____

Please attach coupon to your business card or letterhead.

For modern multi-story buildings...



REYNOLDS 100 SERIES

Vertically pivoted

ALUMINUM WINDOWS

This window meets both the design requirements and the special functional needs of today's multi-story buildings. It provides the minimum air infiltration important in air conditioning, and the positive locking essential to safety. Yet this airtight window is easily opened for washing entirely from the inside. Special jamb design accurately positions window in fully closed and washing positions. All-welded frame construction has self-draining feature. Manufactured to architect's size requirements. Write for catalog. **Reynolds Metals Company**, Window Division, 2020 South Ninth Street, Louisville 1, Kentucky.

New Equitable Life Building, San Francisco, features Reynolds 100 Series Aluminum Windows. *Architects:* Loubet and Glynn, San Francisco. *Consulting Architect:* Irwin Clavan, New York. *General Contractor:* Dinwiddie Construction Company, San Francisco.

Available with or without Hopper Vent. Pivoted vent easily removed. Secures in reverse position for cleaning...locking in both positions. For safety, vent must be fully closed and locked before key can be removed.

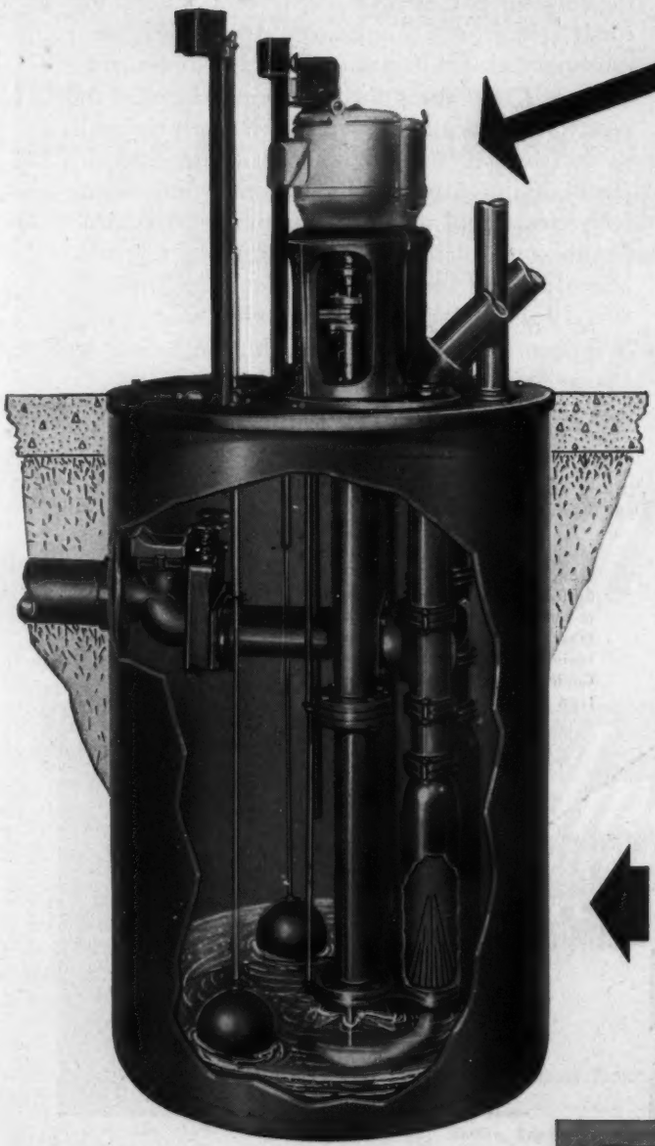
REYNOLDS ALUMINUM

BUILDING PRODUCTS

See "FRONTIER," Reynolds new dramatic series, Sundays, NBC-TV Network.

Avoid pump clogging trouble....

with "FLUSH KLEEN"® SEWAGE EJECTORS



Type "F" submerged
"Flush Kleen" sewage ejector

This is the only truly clog-proof sewage ejector. Only liquid is handled by the impeller. All other air or liquid ejectors have working parts in contact with coarse sewage material that causes clogging. In the "Flush Kleen" all coarse matter is strained out, then back-washed from the strainer into the higher level sewer. Of the more than 8000 "Flush Kleen" sewage ejectors used on ships, military installations, municipal lift stations, commercial and industrial buildings of all kinds, not one has ever clogged.

Protect your client — and your reputation. Guarantee owner satisfaction by specifying "Flush Kleen" sewage ejectors wherever sewage must be pumped.

OPERATING DETAILS

"Flush Kleen" sewage ejectors are usually installed in duplex units and operate alternately. While one pump operates, sewage flows into the wet basin through the idle pump. A strainer ahead of the pump impeller retains all coarse sewage matter. (see cut-away)

When the idle pump starts, the coarse sewage matter in the strainer chamber is flushed into the discharge pipe with liquid sewage.

A special check valve prevents discharges back into the inlet line.

Engineering data showing how to determine sewage ejector capacities for any type or size of building are now available. Write to Dept. A for your copy today.

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Subsidiary of Food Machinery and Chemical Corporation

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Condo-Vac ®, Sure Return ®, AVC, LVC, Fire, House & Circulating Pumps, Pneumatic & Tankless Water Systems . . . Flush Kleen ® Sewage Ejectors, Little Giant ® & Non-Clog Bilge Pumps. Pumps for every industrial use.

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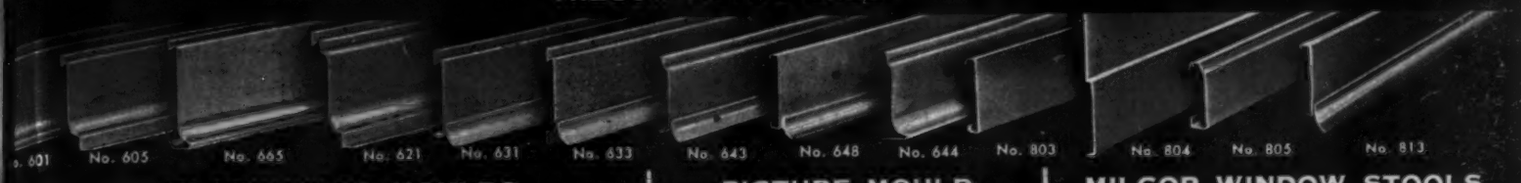
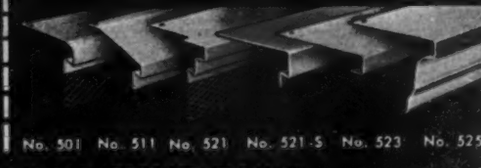


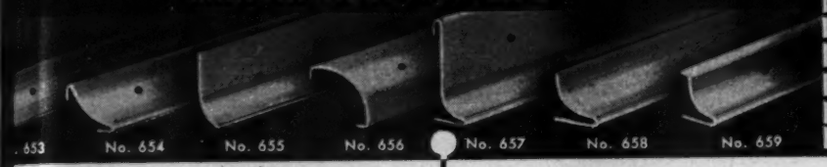
MILCOR BLACKBOARD MOULDS

PICTURE MOULD

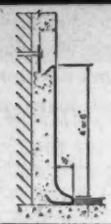
MILCOR WINDOW STOOLS



MILCOR COVE MOULDS

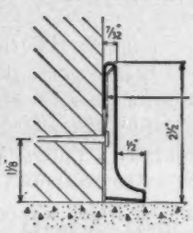


MILCOR CHAIR RAILS



No. 605 Flush Base

No. 625 Splayed Metal Base



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Milcor Metal Trim is made of steel. It resists wear, resists fire, and can't warp, shrink or rot. It is economical to install, easy to clean and maintain.

Refer to the Milcor catalog in Sweet's or write for Milcor Catalog No. 102.

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Milcor Metal Trim forms the stool, jamb, and head sections of the window in this four-bed room in the New Carney Hospital, Boston, Mass.
Architects — Maginnis & Walsh & Kennedy, Boston, Mass.
General Contractors — Walsh Brothers, Cambridge, Mass.
Metal Trim Contractors — Hillaby Fireproofing Co., Cambridge, Mass.

THE RECORD REPORTS

WASHINGTON TOPICS

(Continued from page 44)

dents of each of the region's seven A.I.A. chapters. There it was resolved to set up special urban planning committees in the Rhode Island, Connecticut and Massachusetts chapters to provide a channel for making services of chapter members available to whatever state agency the governors of these states, the hardest hit in New England, might request; and Mr. Mather was authorized to advise the governors of the Council's action and of its desire to be of any possible assistance.

The National Association of Home Builders established emergency county committees in the hardest-hit localities of Pennsylvania, Connecticut and Massachusetts, and sent a team of technical men from N.A.H.B. headquarters in Washington to advise in the three-state area. Homebuilders in these areas advised the Red Cross of their equipment inventories so disaster workers had a pool of construction equipment to call upon as needed.

The Associated General Contractors of America contacted all of its chapters in the flood areas asking to be notified of emergency activity taken by individual contractors and their local organizations.

As the Federal government responded to President Eisenhower's directive calling for all resources possible to be turned to the assistance of the stricken, the Federal Civil Defense Administration, charged with coordinating the whole effort, had the biggest job, but other agencies played a part.

The Small Business Administration immediately prepared to make available three per cent loans amortizing in 20 years to cover construction costs on houses, commercial and industrial properties — direct loans with Federal funds.

The Housing and Home Finance Agency said FHA was placing in effect its 100 per cent insured $7000 disaster loans. The Public Housing Administration, with funds from FCDA, made trailers available on an emergency basis. The Federal National Mortgage Association was, of course, in a position to assure purchase of advance commitments on both FHA-insured and VA-guaranteed loans for the affected area.

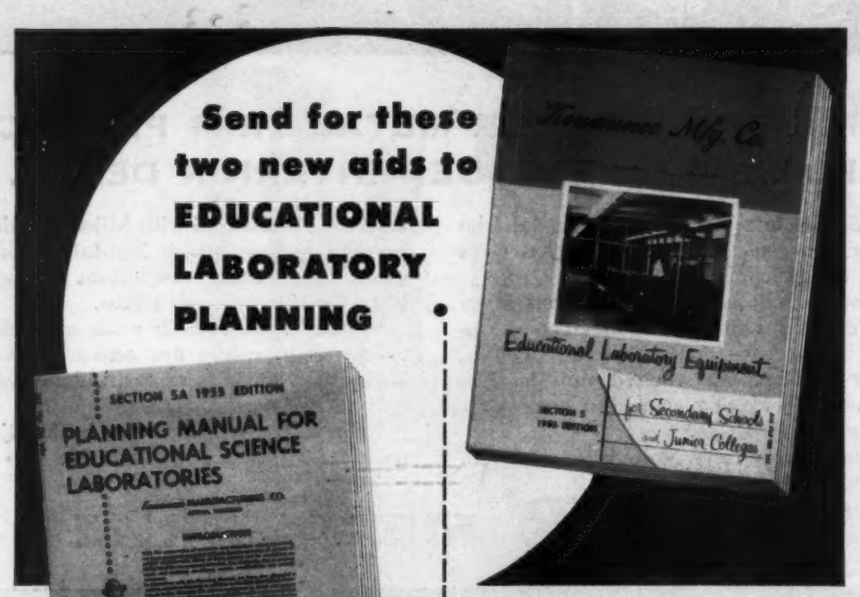
Looking to the future, the Army Corps of Engineers began its first year's work on a survey to study the behavior of hurricanes and to determine possible means of minimizing loss of life and damage to property from them. Congress had appropriated a million dollars for the work.

On another matter which was causing considerable distress among flood victims FHA's Commissioner Norman P. Mason had some ideas. Very little of the damaged property was covered by flood insurance because of serious underwriting problems; private companies shy away from assuming risk where losses cannot be spread widely over a general base.

Commissioner Mason sees no reason why there can't be a system of government-insured insurance for flood-wrecked housing, and he came back from visits to the flood areas determined that the government should take the initiative in arranging for some form of flood insurance protection.

"There is a glaring need for some type of protection," Commissioner Mason declared, "and the problems are such that this seems to be a field in which the government must take the initiative."

(Continued on page 386)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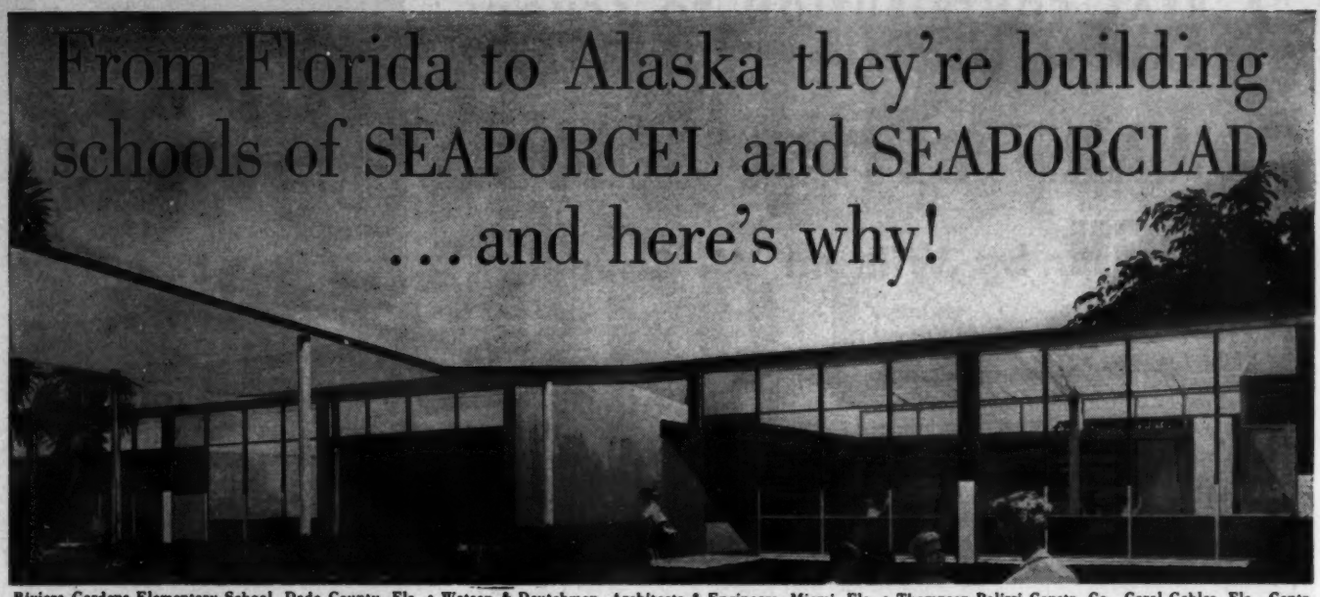

Riviera Gardens Elementary School, Dade County, Fla. • Watson & Deutchman, Architects & Engineers, Miami, Fla. • Thompson-Polizzi Constr. Co., Coral Gables, Fla., Contr.

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"A REAL CONTRIBUTION TO SCHOOL PLANNING LITERATURE" John Lyon Reid

TOWARD BETTER SCHOOL DESIGN by William W. Caudill

So complex is today's task of designing a good school that architects need planning information that goes beyond physical considerations into the social, economic and cultural forces which affect the school system. At the same time they need practical information that offers concrete solutions to planning problems that they are encountering daily.

TOWARD BETTER SCHOOL DESIGN contains this vital information. Working from his immediate experience, William W. Caudill successfully relates school design to the aims and methods of education, to the influence of environment on the learning process, and to the role of schools as community institutions. He shows how the planner must assess every factor, weigh each one, and plan an architectural solution to his specific educational, economic and environmental problems.

William W. Caudill is eminently qualified to render aid and advice on the task of planning schools and school building programs. In his twenty-year school planning career he has won an international reputation for combining a practical approach with exciting creative vision. As research architect at the Texas Engineering Experiment Station of Texas A. & M., he pioneered studies of classroom shapes and sizes as related to physical and emotional environment, and formulated many of the basic principles upon which good schools are being built today. During the last four years he has designed over fifty schools and has lectured and served as a consultant throughout the United States.

Education and Enviroment: Caudill demands that a good school must be designed from the inside out, and "every idea, every material, every dollar related to the needs of the pupil." What are the physical and emotional needs of the pupil? How does the learning process affect the form of the building? What is the best physical and emotional environment in terms of room shape and size, fenestration, ceiling height, light, color, textures, acoustics, ventilation, landscaping?

Economy: Caudill attacks the problems of costs head-on. He clearly differentiates between "low-cost" schools and "economical" schools, and quotes actual cost figures to illustrate his points. He explains how to set up a cost-control plan, and how total costs are affected by land, shape and size of building, materials, structural frame, construction methods, space allocation, and service equipment. He compares prime and maintenance costs to show how "saving" on one may produce serious loss on the other. Finally, he discusses the proper timing of bid-letting as a cost-cutting tactic.

SEVEN EXTENSIVE SECTIONS

the PUPIL and the school plant
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ECONOMY and the school plant
CITY PLANNING and the school plant
the DIVISION OF SPACE for effective education
the PLANNING PROCESS and the school plant

91 SPECIFIC CASE-STUDIES FROM ACTUAL PROJECTS

Each case study is presented in 3 parts: 1) the Prob... 2) the Approach, 3) the Solution. Here are a fe... them:

- Can boiler rooms have educational functions?
- How can a very small site located in enormously expe... property be best utilized?
- Can improvements in the appearance and economy of l... ware be made?
- Can corridors be used for educational purposes?
- What is a good way to provide easel painting in Kindergarten?
- Can a school library be designed to serve the communit...
- Can toilets be designed to minimize control problems?
- Can open type corridors be used successfully in North... most areas?
- Can low budget gyms be lighted by natural means effecti...
- Can improvements be made on combination of cafeteria ... ice with other school functions in an elementary sch...
- Can a highly compact school plant have decentralized classrooms?

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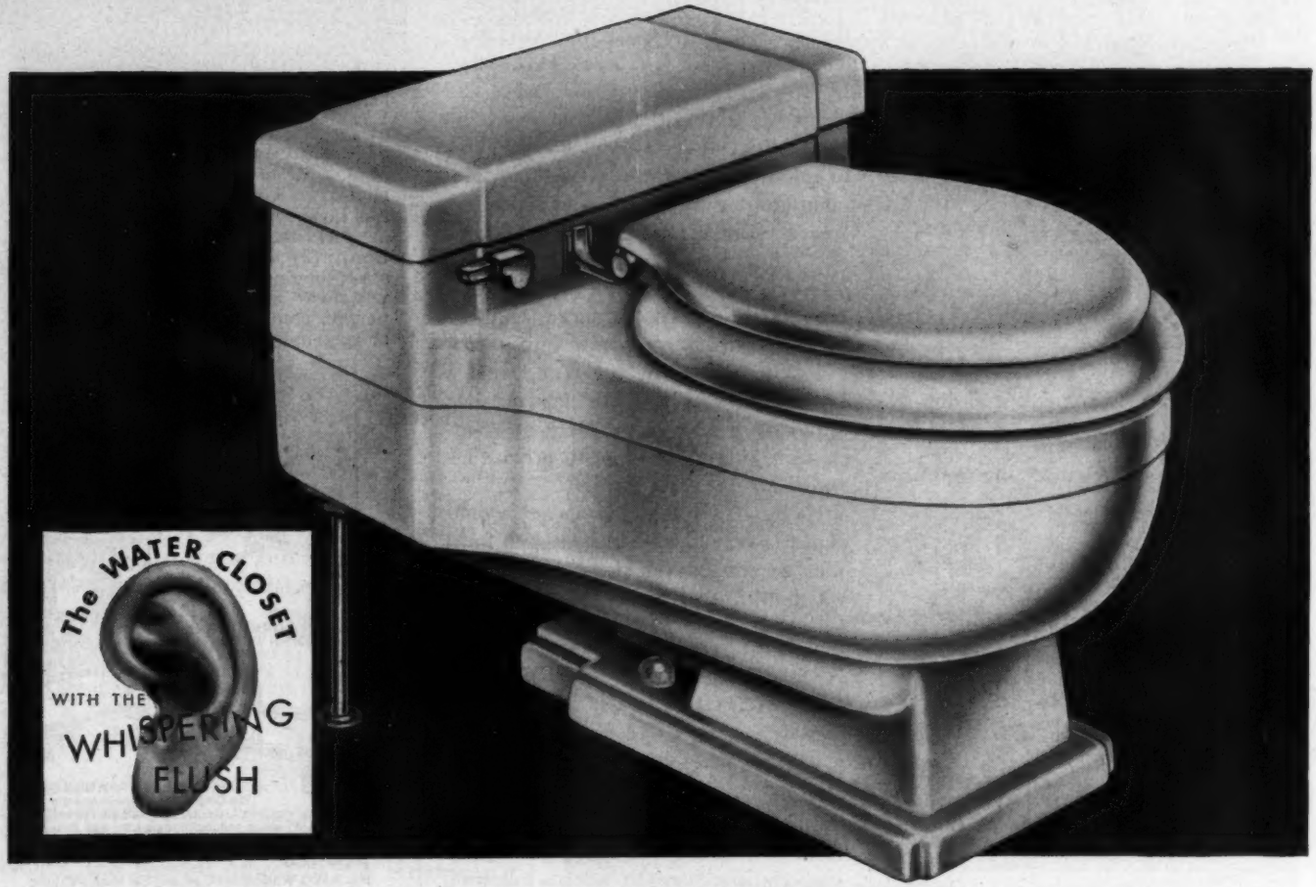

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Look at these exclusive features. *Non-Overflow bowl; safeguarding antisyphon ballcock; healthful seat height; streamlined, up-to-the minute design,* time tested, with the whispering flush that's already known throughout the industry.

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THE RECORD REPORTS

WASHINGTON TOPICS

(*Continued from page 382*)

Commissioner Mason proposes that private companies and the government work together, and moved immediately to initiate action by appointing a committee, with industry-government conferences planned.

"To those who say that insurance against the hazard of floods is unrealistic and unworkable," Mr. Mason continued, "I say that the least we can do for American families facing such overpowering loss in the future is to explore every possible means of protection.

"When FHA mortgage insurance was first proposed, it was assailed as radical and unworkable. Its success is revealed by the spurt in the growth of home ownership during the past 20 years."

The FHA executive had several ideas in mind. He cited the present government crop insurance program which has shown a surplus in recent years. Another possibility, he said, is to pattern flood insurance after a war-time plan which brought the facilities of more than 500 private casualty companies into a program coordinated by the War Damage Insurance Corp. Still another possible approach would be government re-insurance limiting the loss to private insurers.

He promised that his agency would explore every avenue in its search for a way to prevent the devastating losses which altogether had been estimated at $2 billion in the flood-ravaged area.

NBS REPORTS ON STUDIES OF REINFORCED CONCRETE

The store of printed information on behavior of reinforced concrete beams and slabs has been enriched with the addition of a recent report on cracks in loaded beams and slabs prepared by the National Bureau of Standards following exhaustive tests.

There was this general conclusion: that width of cracks can best be controlled through the use of a large number of small reinforcing bars and by increasing the ratio of reinforcement. The results are in qualitative agreement with the findings of other investigators.

The NBS study was carried on in the structural engineering laboratories by A. P. Clark of the American Iron and Steel Institute's Research Fellowship at the Bureau. Tests on 58 beam and slab specimens contributed new information.

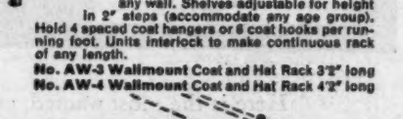
(*Continued on page 390*)

A system of multi-purpose movable steel wardrobe racks with either a chalkboard (blackboard) or a corkboard (bulletin board for pictures, maps, etc.) back. These sturdy, welded furniture steel units provide: (1) Means for holding coats, hats, overshoes and lunch boxes in an efficient and orderly manner; (2) Chalkboards or corkboards to aid class instruction; (3) Efficient, large capacity, space-saving wardrobe units, that go wherever needed, fit any space, and permit complete flexibility in room arrangement.

NO. CH-400 CHALKROBE 4'2" long, 25" deep, 6'½" high on glides (or 6'4" high on casters). Hat shelves and hanger bars are adjustable for height—accommodate every age group—(Hold 16 with coat hangers or 24 with coat hooks.) Off-floor shelf for overshoes and 50" x 48" chalkboard.

NO. CO-500 CORKROBE same as No. CH-400 but with corkboard back.

WALLMOUNT WARDROBE RACKS— Mount permanently on any wall. Shelves adjustable for height in 2" steps (accommodate any age group). Hold 4 spaced coat hangers or 8 coat hooks per running foot. Units interlock to make continuous rack of any length.
No. AW-3 Wallmount Coat and Hat Rack 3'2" long
No. AW-4 Wallmount Coat and Hat Rack 4'2" long



WALLMOUNT OVERSHOE RACKS— Mount on wall at floor level . . . extend 11¼" out from wall. Interlock to make rack of any length.
No. B-3 Wallmount Overshoe Rack 3'2" long
No. B-4 Wallmount Overshoe Rack 4'2" long

Checker* This 5 ft. double faced rack holds 50 coats and hats. Goes wherever needed—on large casters.

* Vogel-Peterson Trade Mark

Checkerette Ideal rack for choir robes or sacristy. Knocks down and stores like a folding chair.

Write for Bulletin SL-52

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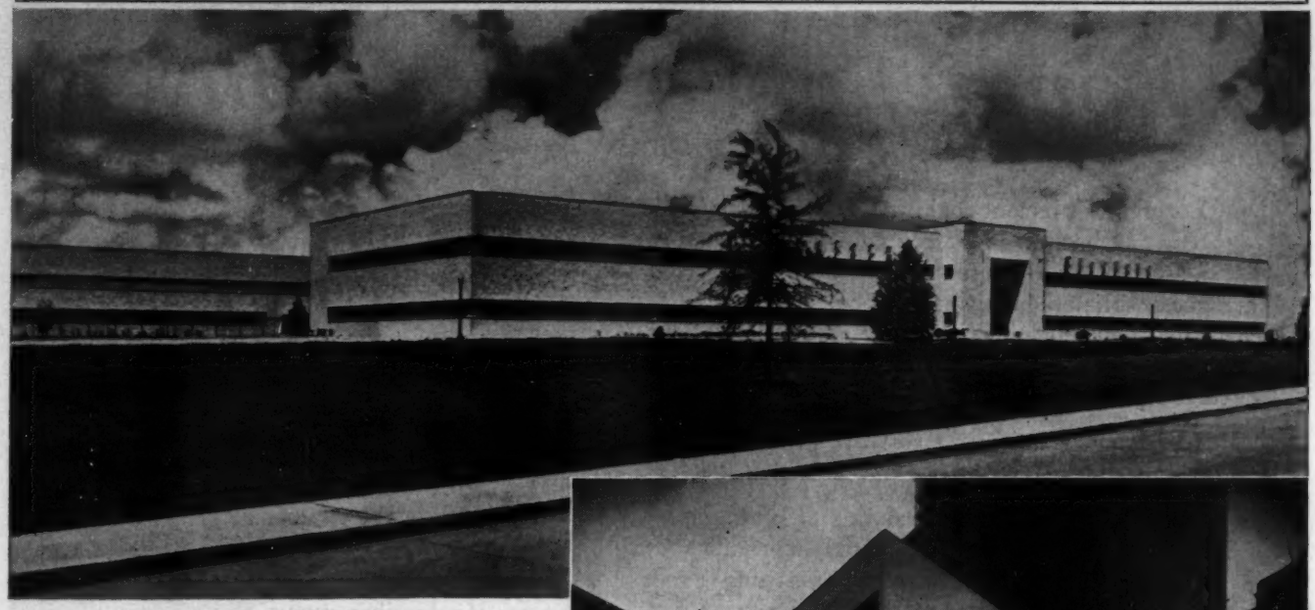
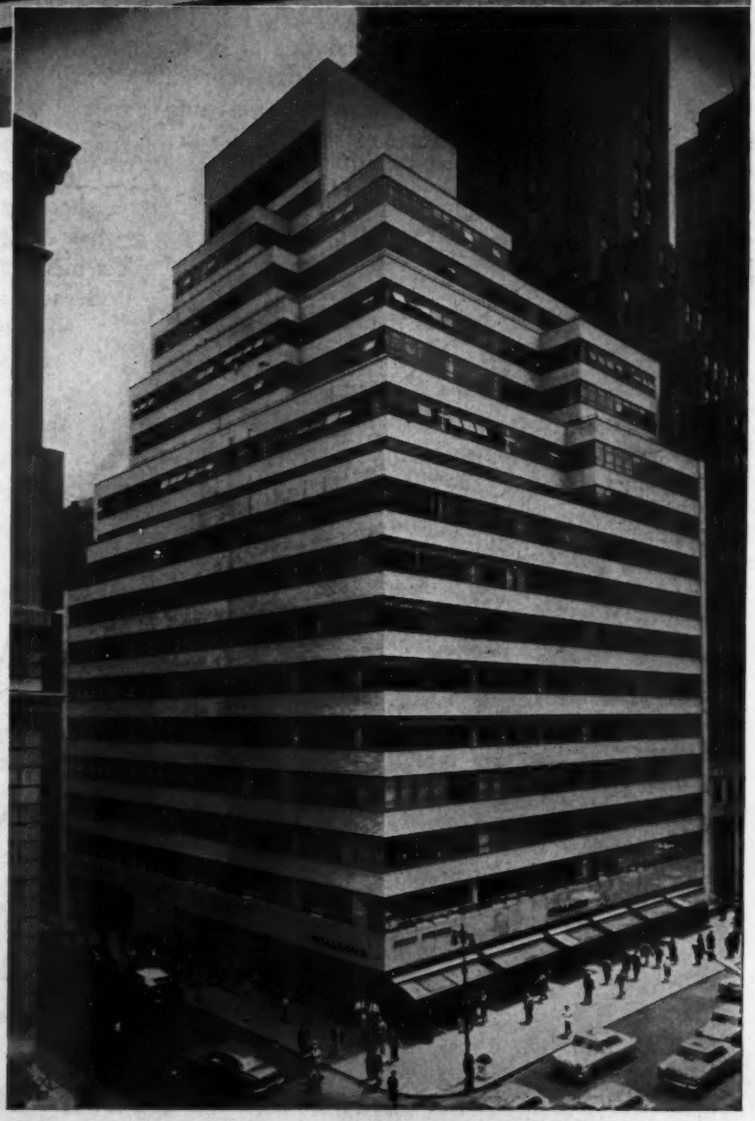
ON THE NEWS FRONT WITH STRUCTURAL STEEL





New Plant for Western Electric ▲

Communications devices for both the Bell Telephone System and the Armed Forces are being manufactured in Western Electric Co.'s new plant at Winston-Salem, N. C. Built on a framework of Bethlehem structural steel, the manufacturing building has a main floor and partial lower floor with a total area of 452,000 sq ft. A portion of the building is equipped with both general-comfort and special-process air-conditioning.

Architect: Walter Kidde Constructors Co., Inc., N. Y. C.; *general contractor:* Western Electric Co., Inc., N. Y. C.; *steel fabricator:* Carolina Steel and Iron Co., Inc., Greensboro, N. C.; *steel erector:* Craven Steel Erecting Co., Greensboro.

Office Building on Fifth Avenue ▶

The new 19-story Amoco Building on Fifth Avenue, with a steel framework containing 1800 tons of Bethlehem Structural Shapes, houses the general offices of the American Oil Company. The fully air-conditioned building contains 173,000 sq ft of floor space, exclusive of the ground floor. Exterior trim is white glazed brick, with large areas of glass to the north and west.

Architect: Emery Roth & Son; general contractor: Psaty and Fuhrman, Inc.; steel fabricator and erector: Schacht Steel Construction, Inc., all of New York.

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BETHLEHEM STEEL

BETHLEHEM STEEL

"I shot an arrow into the air,
It fell to earth, I know not where."

The Arrow and the Song—Longfellow, 1845

Longfellow a space buyer?

Longfellow's lament could well have been applied to advertising back in 1845. Yes, even up to 1914 when a group of advertisers, agencies and publishers, alarmed by the waste and guesswork in their business, brought order out of advertising chaos by organizing the Audit Bureau of Circulations. These pioneers in circulation auditing established a definition for paid circulation, rules and standards for measuring circulation, methods for auditing and reporting the FACTS. *For value-minded advertisers the era of blind space buying ended in 1914.* ☆ ☆ Today's experienced space buyers use the audited information in A.B.C. reports to aid them in applying media to markets and get full value for advertising dollars. Here are some of the FACTS in A.B.C. reports that provide a sound basis for advertising investments: • How much paid circulation • How much unpaid distribution • Occupational or business breakdown of subscribers • Where they are located • How much subscribers pay • Whether or not premiums are used • How many subscribers in arrears • What percentage of subscribers renew. ☆ ☆ Sales messages go direct to their targets, there's no shooting "into the air" when space buyers base their decisions on A.B.C. FACTS. This publication is a member of the Audit Bureau of Circulations because we want our advertisers to know what they get for their money when they use space in these pages. Ask for a copy of our A.B.C. report and then study it.

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ARCHITECTURAL RECORD

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has structural framing of glulam timber arches. Arched building below is gymnasium,
also framed by glulam timber arches of Timber Structures, Inc. Architect: Lawrence G. Thompson, Chico;
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Build Better Schools

...with the finest of structural timbers

Economy for tight budgets... durability for generations of strenuous use... attractive appearance *always*—this is the combination you get when you use structural members by Timber Structures, Inc. for framing your schools.

To architects and builders of school plants... Timber Structures, Inc. offers the benefits of more than a quarter century of experience in timber engineering, laminating and fabricating. A 30-acre plant, complete with specialized equipment and manned by a staff of engineering and fabricating specialists, insures that your work is done on time and to your exact specifications.

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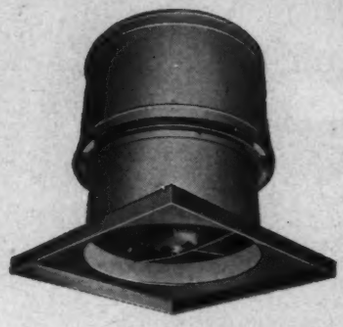
FOR
Fast
DISCHARGE of AIR at HIGH VELOCITY



Allen
VERTICAL DISCHARGE FAN

• *Keeps fumes from leaking back through building openings*

Whenever you face the problem of discharging fumes through a roof so that they will not short-circuit back through building openings, you'll find the solution in this Vertical Discharge Fan. It is designed especially for industrial applications that require the removal of a large volume at high velocity. It is fabricated of zinc-coated iron sheet with welded construction throughout. Automatic wing dampers open with air blast, close weather-tight when not operating. Available as "VD" direct drive with motor mounted inside air stream or as "VDR" with motor mounted outside throat of ventilator—both in a wide range of capacities and sizes.

See Sweet's Architectural File, Section 20b or write for catalog.

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Roof Ventilators for Every Industrial Need

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Please send me informative literature on your complete line of roof ventilators.
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City, State

THE RECORD REPORTS

WASHINGTON TOPICS

(*Continued from page 386*)

Spokesmen said the findings promise to prove useful in controlling the spacing and width of cracks in the future design of reinforced concrete structures. Until the Bureau tests were run, there had been no systematic study of beam and slab performance with the new and improved deformed reinforcing bars.

The Bureau's report summary (No. 100) stated: "The average spacing of cracks decreased rapidly with an increase in steel stress beyond that causing the first crack, and at a stress of 30,000 psi or more the average spacing appeared to approach a constant value. For individual specimens, the minimum average crack spacing varied from approximately 3 in. to nearly 7 in., with a 4-in. average spacing for all of the specimens."

NEW PROPOSAL MADE FOR TAXING VARYING INCOMES

Architects and engineers would have a sizeable stake in new legislation proposed by Rep. Thomas B. Curtis (R-Mo.) designed to average lean and fat annual incomes for tax paying purposes. The plan aims to give tax relief to those with widely fluctuating incomes.

It would work this way: anyone with taxable income for any one year exceeding 150 per cent of his average taxable income for the previous five years could spread the excess over the total six-year period.

This differs widely from the Keough-sponsored bill — which has had the endorsement of the American Institute of Architects — to enable architects and other self-employed persons to set up tax-free security plans of their own.

Representative Curtis said he would urge study of his bill during the recess and push for Ways and Means Committee action in January.

The Curtis plan does not consider minor fluctuations of income or sudden windfalls. Mr. Curtis contends that the segment of the taxpaying public whose incomes vary widely has been subjected to unfair treatment.

The Internal Revenue Service is expected to oppose the Curtis bill vigorously if it reaches the committee hearing stage.

CAA AND INDUSTRY WORK AT AIRPORT BUILDING CRITERIA

Another example of industry and government joining forces to improve pro-

(*Continued on page 394*)

Since 1931 in the building of the Equitable Life Assurance Society of the United States at 393 Seventh Avenue, New York, Sedgwick Dumb Waiters have been giving trouble-free service.

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lifting equipment means
minimum maintenance

In prominent, well-planned buildings all over the world, Sedgwick equipment has established an enviable record for long life and low maintenance costs. Constant improvements and specialized manufacturing techniques have assured quality performance for over 60 years. Sedgwick vertical transportation equipment has been specified by over three generations of architects.

Sedgwick furnishes safe, modern vertical transportation equipment to fit your plans. Write for free specification service and engineering recommendations.

when there's more
than one floor
think of . . .

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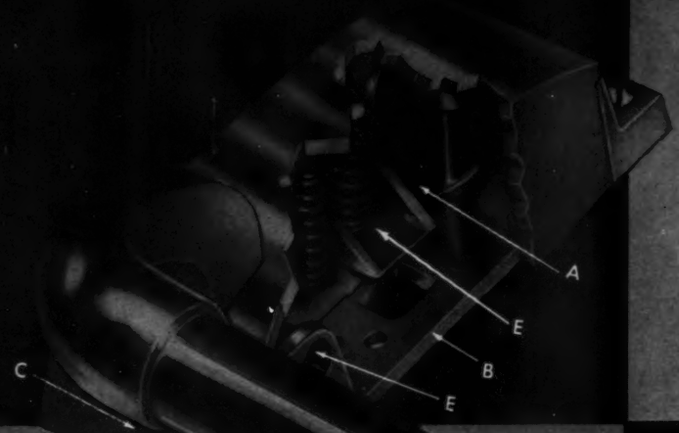
SEDGWICK MACHINE WORKS
142 WEST 15th STREET, NEW YORK 11
Specialists in vertical transportation since 1893

IMPROVED

"Feather Touch"

PANIC EXIT DEVICE



A. Latch retracts from outside with "oilite" bearings—a feather touch feature.

B. Action stops against heavy cast base for long life.

C. Concealed bolt dog is screw jack type . . . cannot jam . . . cannot be removed.

D. Extra heavy arms . . . plenty of finger clearance.

E. Rustless pivots and springs.

and still only two Moving Parts!

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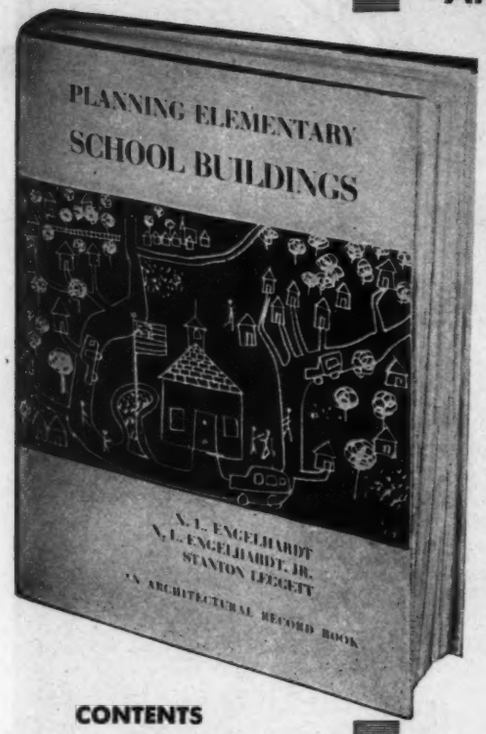

planning elementary school buildings

by N. L. Engelhardt, N. L. Engelhardt, Jr., and Stanton Leggett

CONTENTS

WHAT MODERN EDUCATION LOOKS LIKE

CLASSROOMS
Classroom Activities • Elements of the Classroom • Auxiliary Classroom Facilities • Service details for the Elementary Classroom

SPECIALIZED EDUCATIONAL SPACES
Library • Assembly and Community Room • Playroom • Lunchroom • Multi-Purpose Room • Outdoor Educational Areas and Site Planning

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AUXILIARY ROOMS
Administrative Spaces • Teacher Spaces

WIDER USE OF SCHOOL BUILDINGS
Provisions for Community Groups • Space for Children's Organizations

ORGANIZATION AND SIZE
Administrative Divisions • Organization Practices • Size of Schools • Home Schools

SURVEYS AND SITE SELECTION
The Community Survey • Procedures in Developing a School Building Program • Site Selection

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Written out of the authors' long experience as planning consultants to boards of education, architects, and builders throughout the country this new book:

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—explains the philosophy, the goals, and the terminology of modern elementary education
—illustrates the daily activities of classroom, playroom, auditorium, library, and auxiliary areas

Illustrated with some 300 photographs, this book gives you specific planning data on site selection, one-story vs multiple-story design, layout and floor space in classrooms, necessary equipment for classrooms, lunchroom, indoor playroom, library, assembly room, faculty and administrative offices, custodial space—plus, of course, recommended types of heating, ventilating, and air conditioning systems. Special features include case histories of school surveys in typical communities—step-by-step plans for developing a school building program—and complete check-lists of essential equipment, facilities, and services.

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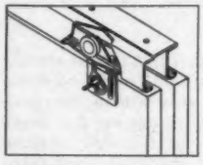

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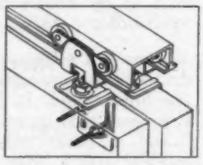

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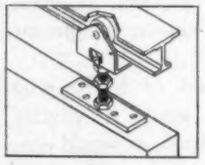

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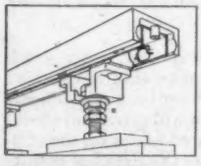

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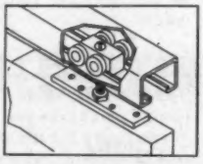

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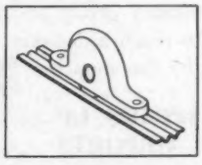

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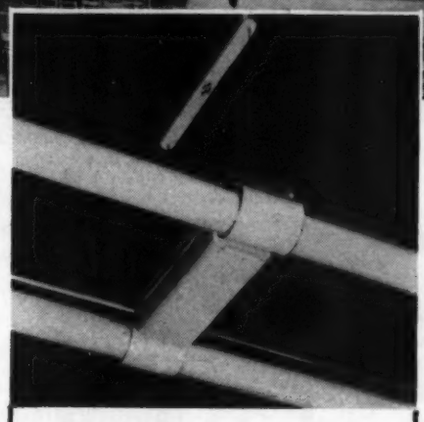

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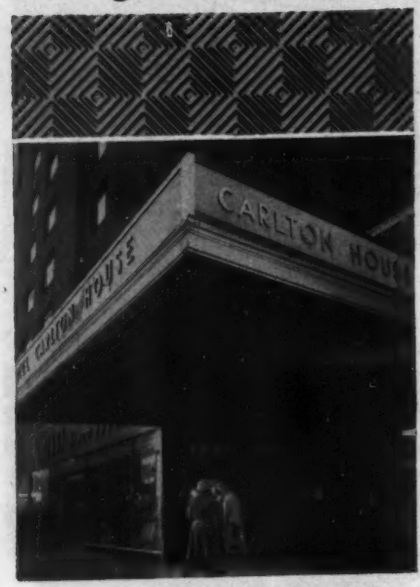

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THE RECORD REPORTS

WASHINGTON TOPICS

(*Continued from page 390*)

gram standards appeared in the new approach to the handling of airport construction aid funds.

With an additional $43 million authorized for aid, the Civil Aeronautics Administration turned to specialists in the heavy construction field for guidance in re-drafting its standards and criteria. The group of advisers also included representative airport users and operators.

A proposed revision under study last month suggested that Federal funds be used to develop adequate airport buildings to the extent necessary to satisfy the functional requirements of civil aviation.

The architecture of eligible buildings, said the proposal, should be functional and not monumental. Excessive ornamentation would be avoided. Space for airline, public and concessionaire facilities should conform reasonably to space standards outlined in the CAA booklet "Airport Terminal Building." Restaurants and other consumer services space should be "reasonable," with elaborate interior treatments excluded from any Federal assistance. The suggested standards would also disqualify built-in items such as showcases, counters, benches, airline counters and similar equipment or fixtures.

"A modest amount of landscaping around a building" would be eligible under the proposed draft, as would construction for storage of airport maintenance, "which should be modest in size and design."

The 11-member industry group and CAA officials hoped to reach a decision on the final language by this month.

AIRLINE PILOT SPEAKS UP ON DESIGN OF AIRPORTS

An airline pilot's views on some aspects of airport design were revealed in a Washington speech by Captain Barton Hewitt (TWA) of Trans-World Airlines.

The ideal airport facility, said Captain Hewitt, should feature at least two runways or parallel pairs of runways which could be expanded to accommodate more powerful aircraft of the future; and these runways should not be rendered partially useless because of obstructions. The ideal airport, he added, would also have a flexible terminal, "functional and economically practical." It might

(*Continued on page 398*)

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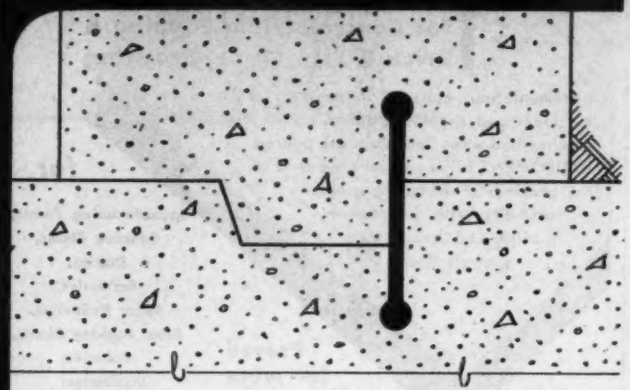

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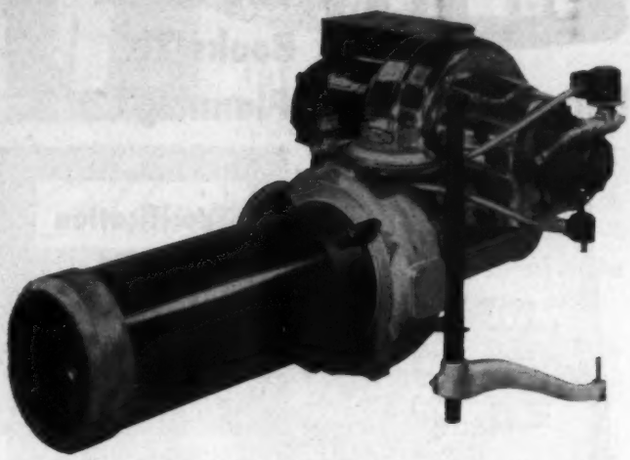

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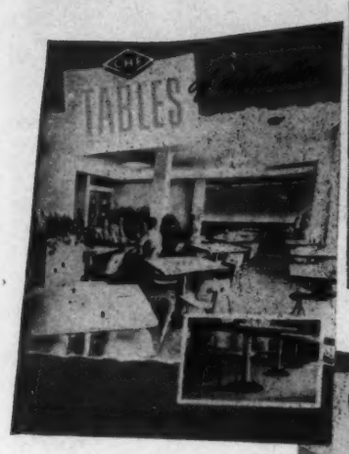

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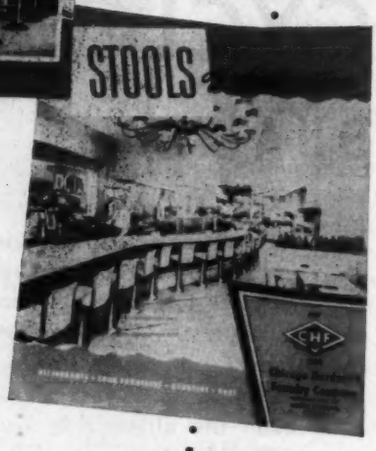

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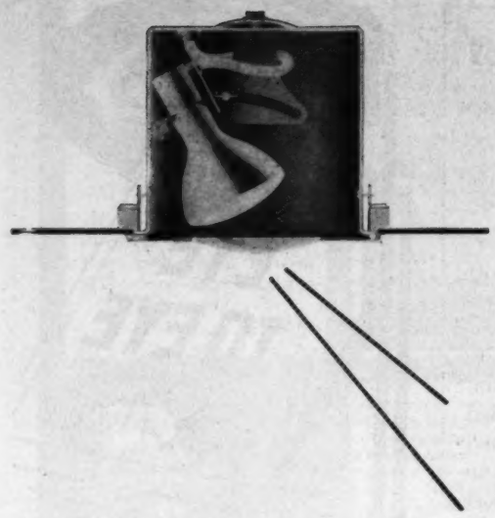

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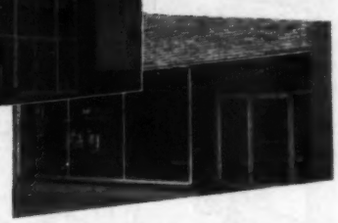

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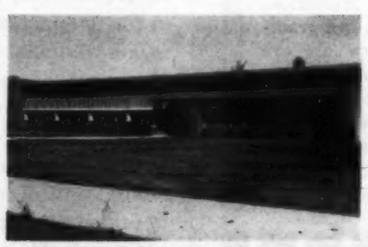

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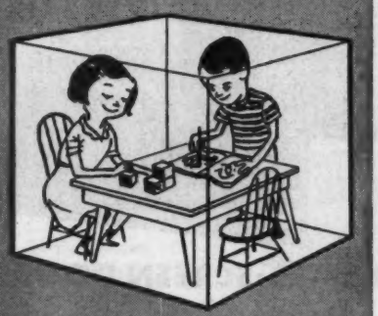

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THE RECORD REPORTS

WASHINGTON TOPICS

(*Continued from page 394*)

have underground fueling facilities or other special built-in services which could lower cost of operation.

From a pilot's viewpoint, runway surfaces should be concrete, Captain Hewitt said, explaining that this type of pavement is easier to see in the dark and its "breaking coefficient" is superior to other surfaces. He also pleaded for runways constructed with clearly marked borders and ends. "These ends and borders of runways should be graded up and given a surface which would support aircraft which might of necessity be forced off the main runway surface," he observed.

Captain Hewitt also noted that strips placed too close to active runways are always within the realm of danger. All taxi strips, he said, should be placed at least 300 ft from runways except at turnoffs and at runway ends.

Captain Hewitt would have terminal and ramp areas "functional," enabling rapid and expeditious handling of baggage, cargo and aircraft. "Great foresight" should be exercised in the design of new terminals, particularly in provision of adequate room for expansion of ramp areas, gate space, etc.

Other points mentioned by Captain Hewitt: hangars and other buildings should be spread out to avoid congestion at the terminal center — crowding often makes terminal expansion impossible; placement of hangars close to active runways often restricts the possibility of lengthening or expanding overrun areas to keep pace with modern aircraft design; control towers should be located in center positions with complete observation of all runways and their approaches; and "it would appear to be worthwhile making the towers a little larger so the operators can move around, but not so large as to hinder their visibility."

HEALTH FACILITIES NEEDS CITED AGAIN BY WOLVERTON

Rep. Charles A. Wolverton (R-N.J.), who has been pushing the Administration's plan for FHA-type loan insurance to stimulate construction of health facilities, says increasing amounts of private capital must be channeled into hospitals and other health structures.

Expressing hope for enactment of legislation of this kind at the next session

(*Continued on page 402*)

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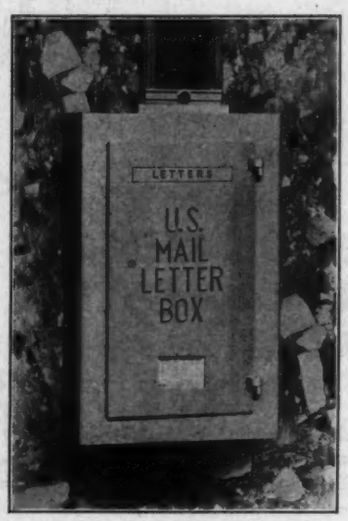

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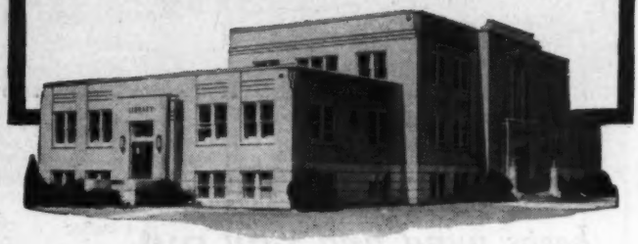
IS UP FOR KEEPS!



"The Zonolite Plaster used in finishing the Lincoln County Library in 1934 is still in excellent condition after more than 20 years and has required no repairs or maintenance other than redecorating."

says Austin E. Fraser
Lincoln County Commissioner
Libby, Montana

After more than 20 years

ZONOLITE PLASTER

Still stands the test of time

Zonolite vermiculite plaster does more than save deadweight...does more than earn highest fire ratings...does more than cut construction time and costs! Zonolite Plaster is the lightweight champion that defies *time!* The Libby Montana public library is one of many blue ribbon buildings (some over 20 years old) offering present-day proof that Zonolite plaster is "up for keeps." Today's building teams look to Zonolite lightweight plaster, the time-tested champion they can apply and *forget.*

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Zonolite Company, Dept. AR 105
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Chicago 3, Illinois

● Please send me free booklet PA-2 on Zonolite Plaster.

Name.....
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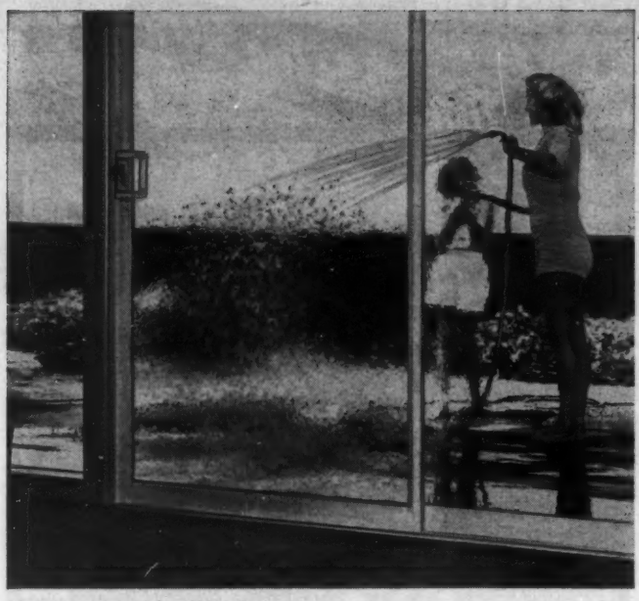

Photo, courtesy Ador Sales, Inc.

How Woven Pile Weatherseal keeps wind and rain **out** *lets light and scenery* **in**

You can keep rain, dust and drafts out of the homes you design or build (and keep conditioned air inside) by specifying doors and windows weathersealed with Schlegel Woven Pile.

Only Schlegel Weatherseal gives you these advantages:

1. *Positive sealing action.* You can drench a door or window sealed with woven pile with a torrent of hurricane velocity. Not a drop will seep through. The most subtle draft can't get past.
2. *Friction-free action.* Listen as you lift a window or glide a door on Schlegel Woven Pile Weatherseal. The flexible fibres are thousands of lively bearings which the door or window rides easily, quietly.
3. *The best of both.* Only Schlegel Woven Pile, developed over half a century, offers those operating advantages balanced so well. For every type of window and door—wood, steel, aluminum . . . *riding, sliding, swinging*—there's a Schlegel flush design that provides friction-free action while sealing out the weather.

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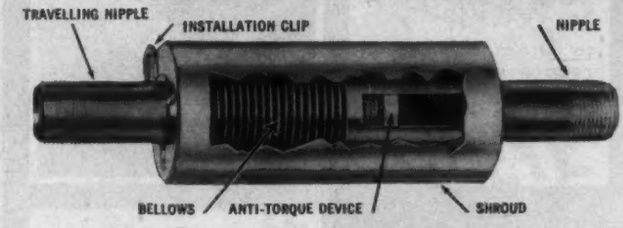

The Flexon High Pressure Compensator*

With the new Flexon High Pressure Compensator*, control of expansion in heat risers becomes practical, efficient and economical. Here is a unit, proved in field applications, that is lighter in weight, more compact and completely maintenance-free.

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*Patent Pending EC-12

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Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.

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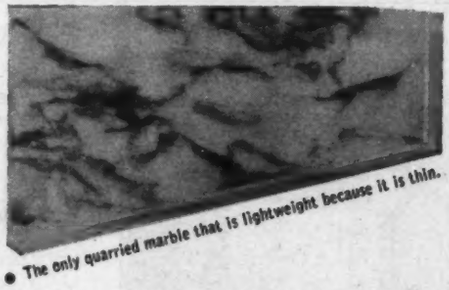

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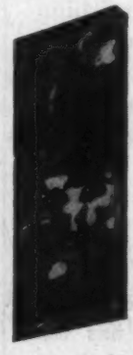

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It is genuine marble, ½ inch thick, 7½ pounds per square foot, comes in measures of 8" x 8", 8" x 12", and 12" x 12".

More information and complete specification data are available by writing the Vermont Marble Company, Proctor, Vermont, or any of its branch offices.

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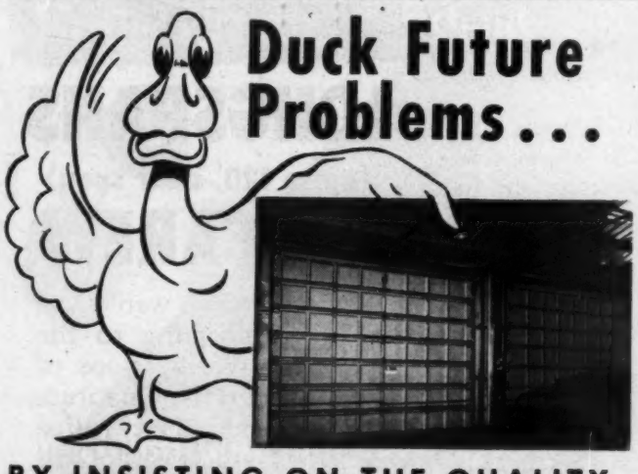

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$25,000 porcelain enamel design competition

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- professional adviser: Harold R. Sleeper, F.A.I.A.

$25,000 IN 25 AWARDS
GRAND PRIZE—$5,000

Eligibility: This competition is open to architects, designers, draftsmen and students of architecture who are residents of the continental United States and Canada, except the following, their employees, office associates, and families: members of the Jury, Ferro Corporation, its advertising agency, Architectural FORUM and the Professional Adviser.

This competition has been approved by The American Institute of Architects • The competition closes December 12, 1955 • Announcements of Awards: On or about January 16, 1956.

CONTESTANTS must register (coupon below) to receive the program, which will include further details of the competition. This is an announcement only; conditions governing the competition and the awards are set forth in the program.

Check one:

- ☐ Architect
- ☐ Designer
- ☐ Draftsman
- ☐ Student

Harold R. Sleeper, F. A. I. A., Professional Adviser
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96 Rockefeller Plaza, New York 20, N. Y.

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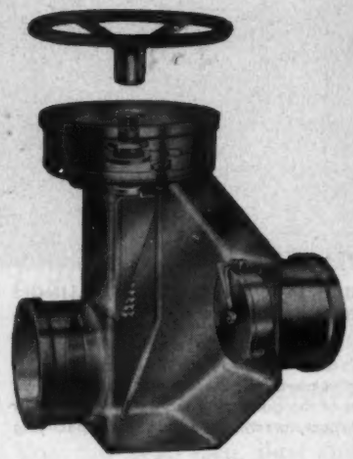

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BOOSEY

THE RECORD REPORTS

WASHINGTON TOPICS

(*Continued from page 398*)

of Congress, Mr. Wolverton made this statement:

"I am greatly pleased that the Administration has adopted in its proposed omnibus (health) bill the principle of mortgage loan insurance for health facilities which was developed in the course of the hearings during the 83rd Congress conducted by the Committee on Interstate and Foreign Commerce. This approach is not dissimilar to the plan that has proved an outstanding success in stimulating residential housing construction. There is every reason to believe that this approach might also be useful in providing additional privately financed health facilities. . . .

"Legislation now pending in the Congress would provide some Federal assistance for the construction of medical schools and non-Federal research facilities."

NOW IT'S BOMB SHELTERS: FHA WARNS ON SELECTION

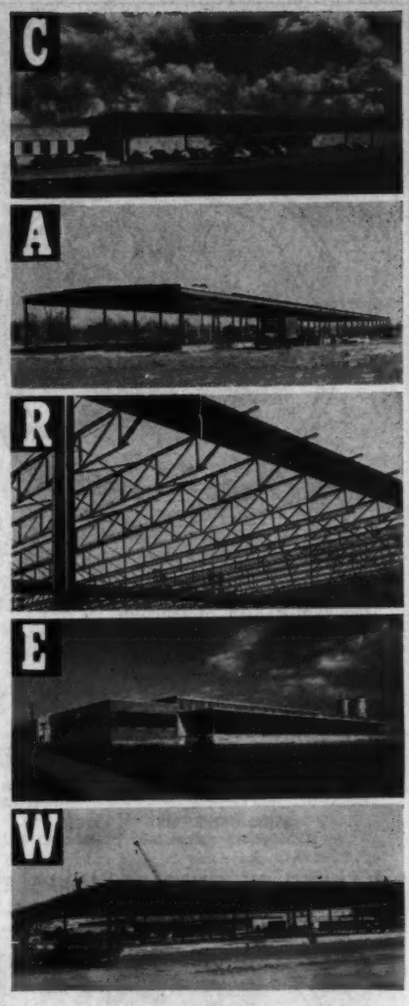
The Federal Housing Administration suddenly issued a warning to Title I lenders to beware of unscrupulous dealers who might be setting up sales organizations to promote bomb shelter construction through "scare selling" techniques.

The agency said it feared these dealers might promote sale of inadequate, overpriced and shoddily constructed shelters through use of Title I home improvement loans. Such loans, requiring no collateral, are legitimate for financing bomb shelter construction of the home variety, but FHA wants lenders to advise prospective borrowers to check their local Federal Civil Defense Administration officials before loans are consummated. This, it said, would assure that home owners get the type of shelter required in their specific localities.

FHA made it clear that it does not endorse, approve or recommend any particular type of shelter. FCDA does. The housing agency also wanted it understood that in the case of Title I loans no inspection of the completed job is made.

C. B. Sweet, director of FHA's Title I home loan operations, said he felt the Title I program could be of valuable assistance in carrying forward the home shelter phase of the Civil Defense program. FCDA has issued pamphlets advising on home shelter construction.

(*Continued on page 406*)



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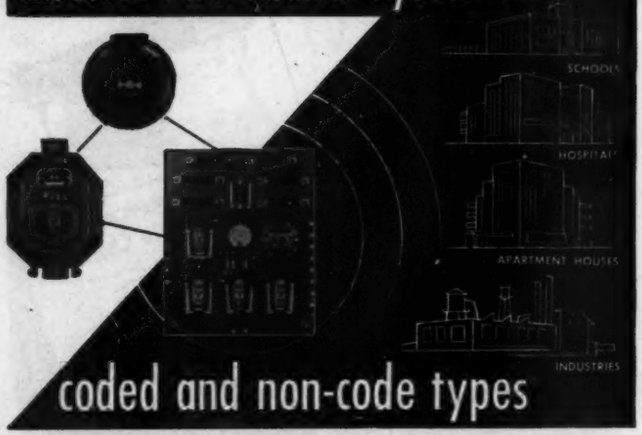
Interior Fire Alarm Systems



coded and non-code types

Complete reliability **is the one thing we demand from a fire alarm system. Therefore, when ordering Interior Fire Alarm Systems, be sure to specify equipment (control panels, stations, and fire alarm bells) produced by Signal Engineering & Manufacturing Co., the originators of A-C Fire Alarm Systems.**

Both coded and non-code types are available in various arrangements depending on type of building or establishment. Although Interior Fire Alarm Systems are intended primarily for warning occupants of a building, they can be connected into a municipal system.

Engineering representatives in principal cities are available to assist in specifications.

Write for Bulletin FA-7

Wheelock FIRE ALARM SIGNAL ENGINEERING & MFG. CO.

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WORLD'S FINEST BILT-IN ELECTRIC OVEN

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GREATEST ARRAY OF FEATURES

★ Air-cooled oven door . . . never too hot to the touch! . . . with big, easy-to-grasp handle ★ Fully automatic controls . . . inclined control panel ★ Recessed Infra-Red smokeless broiler ★ Space-miser baking element, easily removed for cleaning ★ Lifetime stainless steel finish. Handle and controls trimmed in deep Midnight blue ★ Bright, stippled white acid-resistant porcelain interior ★ Full-width protection hood that deflects heat and vapors ★ Easily installed, at waist-height, in any standard 24" wide cabinet.

The MASTERPIECE joins the famous Thermador family of Bilt-in Electric Ranges, the Original and the Finest. A choice of 3 oven sizes with optional Clear View oven window, and twelve Bilt-in Electric Cooking Tops, offering a selection of models with the number of surface units to meet any need . . . with griddle and deep well cooker optional. Special models in a wide choice of colors, including popular Canyon Copper, with optional Easy View oven door.

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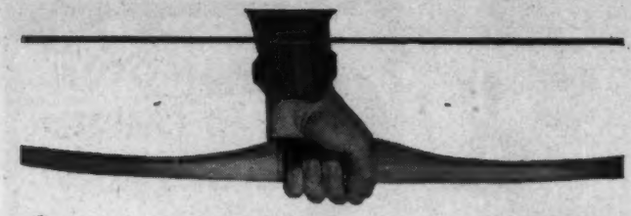

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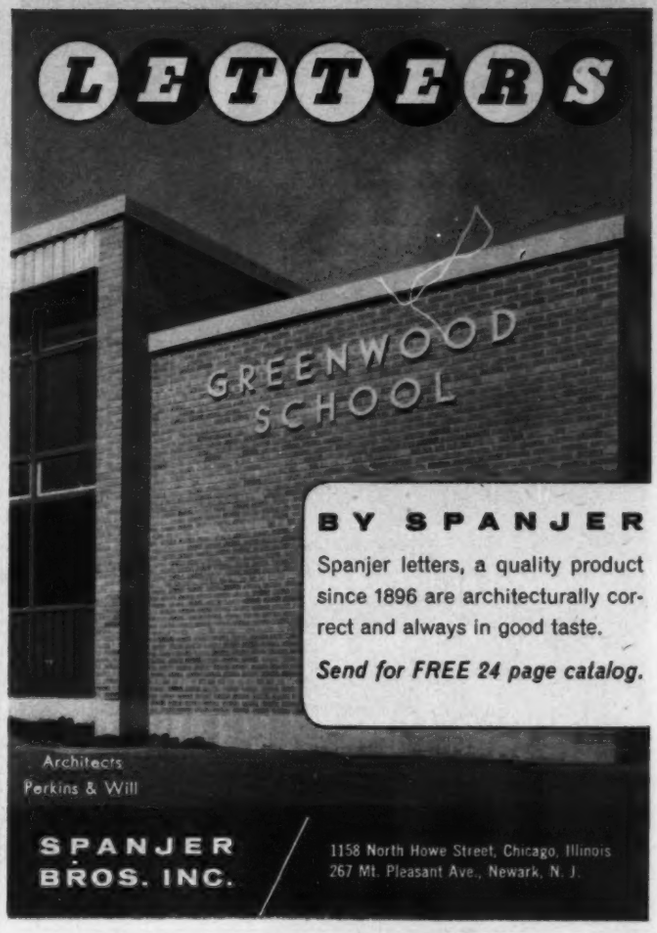
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Specifications, features, and typical applications are shown for the Worthington chillers, which range in size from 7½ to 150 horsepower.

Write today for Bulletin C-1100-B52 to Worthington Corporation, Air Conditioning and Refrigeration Division, Section A.5.59-R, Harrison, N.J. A.5.59-R

WORTHINGTON

Climate Engineers to Industry, Business and the Home

Neill Junior High School, North Chicago, Illinois. Featured are the Alumiline special design Curtain Wall members, along with 2" x 5" tubing around the door frames only. The wall shown is approximately 22' high by 188' long, with an identical wall on the opposite side of the building. Fabricated and installed from Alumiline sections by The National Glass Corp., Chicago, Illinois.

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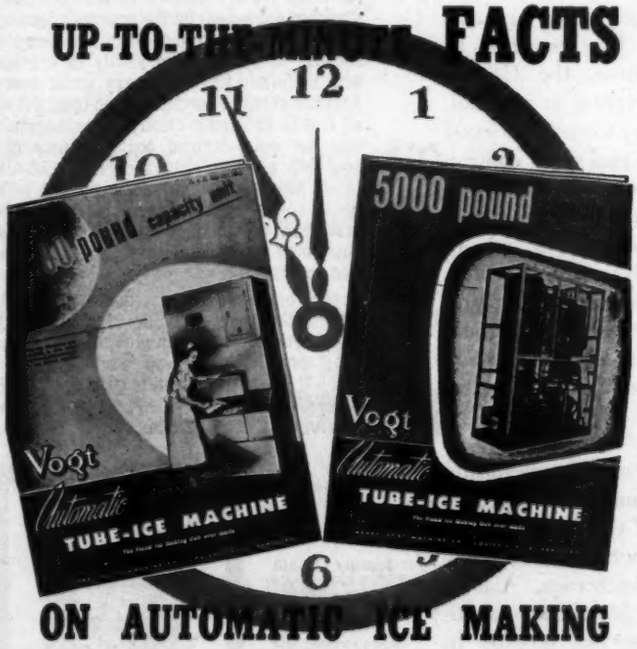
UP-TO-THE-MINUTE FACTS



ON AUTOMATIC ICE MAKING

It's easy to include automatic ice machines in your planning IF you have the necessary facts and figures. These two bulletins, recently released by Vogt, list sizes and capacities, outline the operation principle and list such specifications as weight, water connections, the refrigerant and electric requirements, etc. Please write for your free copies.

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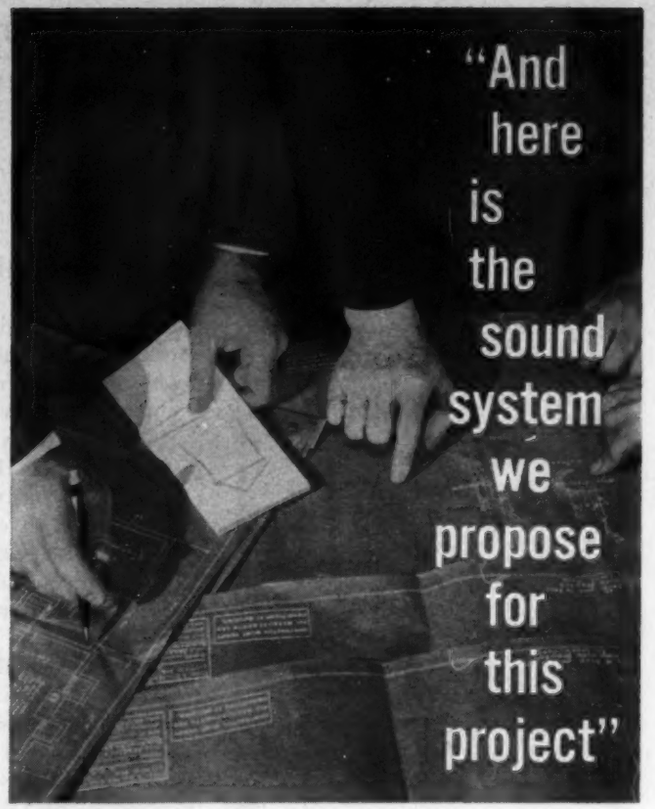

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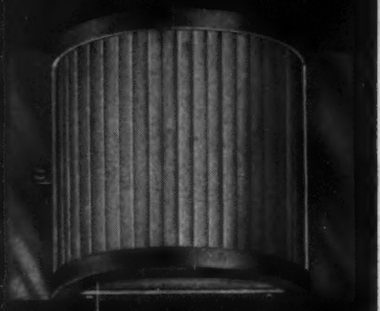

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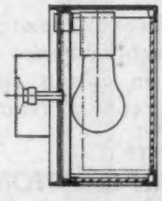

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THE RECORD REPORTS

WASHINGTON TOPICS

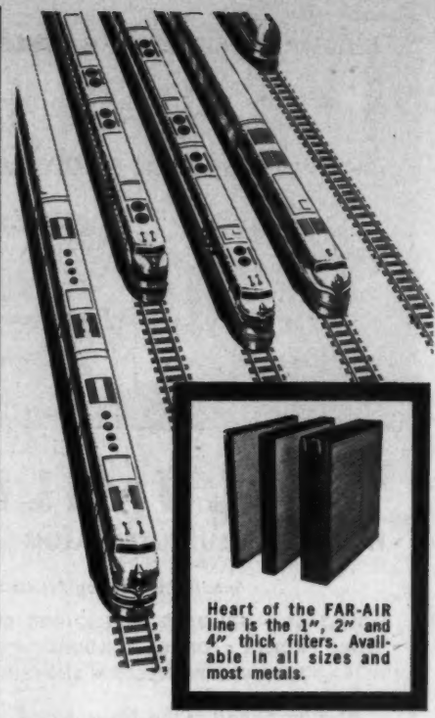
(*Continued from page 402*)

ADDENDA

Sen. Hubert Humphrey (D-Minn.) has been talking Federal aid for school construction during the Congressional recess. He had his own bill in the last session of Congress which would have authorized funds for states for school building purposes similar to the system embodied in the Hill-Burton law governing hospital construction. Despite record sums spent on construction of school facilities, the country is not keeping pace with demands, and Federal money is the only answer, says Sen. Humphrey.

The National Research Council appointed a 14-man advisory committee of the Building Research Advisory Board to amass data on protection against decay and termites in wood frame construction. BRAB is doing this project as one of seven studies to be undertaken for the Federal Housing Administration by next July. Under the contract, BRAB makes "study reports" to the FHA Commissioner on which the latter can base judgments for changes in the agency's Minimum Property Requirements. In naming the committee, the Council chose outstanding experts in entomology, plant pathology, toxicology, wood technology, moisture and vapor control. The group includes an architect (Alfred Parker, A.I.A., Miami), and two homebuilders, for their experience in construction of homes where termite protection is important. The committee represents a wide geographic distribution, with emphasis on those areas where there is considerable danger from termites and decay.

The first military hospital specifically planned, financed, and constructed to serve all branches of the Armed Forces was dedicated last month at Elmendorf Air Force Base, Anchorage, Alaska. Skidmore, Owings & Merrill were architects. The largest service hospital in in Alaska, the 400-bed project was constructed in three wings, the highest eight stories. "Crumble" joints, designed to withstand earth tremors without endangering the building, separate the reinforced concrete masonry wings. The hospital has about 1000 rooms, including private, semi-private and 24-bed wards.



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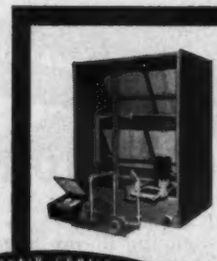

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architects and building owners concerning the purchase of materials finished outside the United States. Experience has proven that attempts to achieve extraordinary economies by having marble finished abroad frequently result in added cost and insurmountable problems.

A new marble specification, recently released by the M.I.A., reads as follows:

> *"All imported marble shall be selected from available stocks in this country, or, if imported, the marble shall be delivered in this country in rough form. All finishing, including selection and jointing to size, polishing, cutting and carving, shall be executed in the United States."*

The Marble Institute of America has issued a bulletin incorporating the wording of The A.I.A. This is available without cost.

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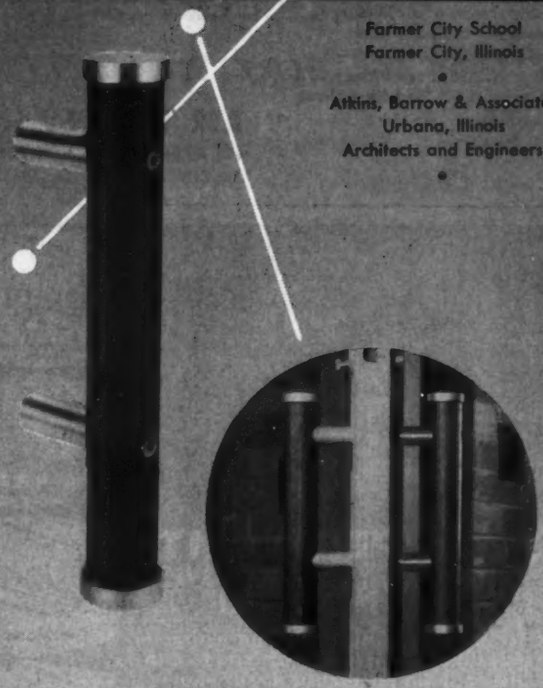

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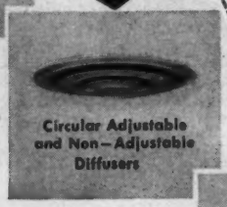

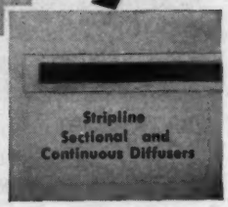

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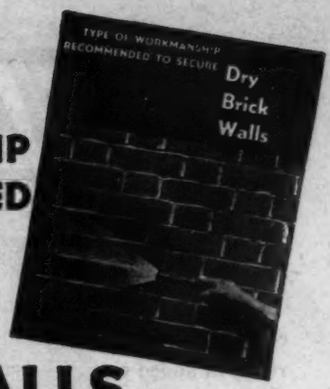

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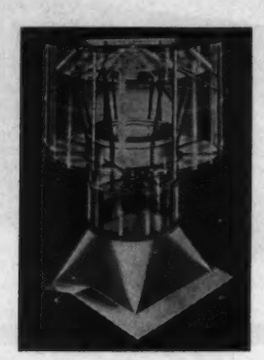

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REQUIRED READING

(Continued from page 66)

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The greatest among them shall be he who best knows you, and encloses all and is faithful to all,
He and the rest shall not forget you, they shall perceive that you are not an iota less than they,
You shall be fully glorified in them.
WALT WHITMAN, as quoted in the *Shingle Style*

TWO STANDBYS — PAPERBOUND

Sticks and Stones. By Lewis Mumford. Revised edition. Dover Publications, Inc. (New York) 1955. 238 pp, illus. $1.50.

The Brown Decades. By Lewis Mumford. Revised edition. Dover Publications, Inc. (New York) 1955. 266 pp, illus., $1.65.

Dover Publications has paperbound these two well known Mumford classics and made them available at prices within the range of all. The text is unabridged; the illustrations are all there.

To refresh your memory: Sticks and Stones is one of the early surveys covering the influences on and the development of American architecture. In his critique, written over thirty years ago, Mumford covers the Medieval tradition as carried out in New England, the Renaissance influence, the Classical period of Jefferson's time, the Romantic period, the Brown Decades following the Civil War, the Imperial facade of the late 90's and the early twentieth century and machine age. In his introduction to this edition, he frankly admits the shortcomings of this work — the most outstanding of which was his mistreatment of the Chicago school.

The *Brown Decades* discusses what he considers the buried Renaissance of the post-Civil War period. He documents his theory with detailed accounts of the contributions of H. H. Richardson, Root, Sullivan and Roebling to architecture; and the development of the graphic arts through the paintings of Ryder, Eakins and Winslow Homer.

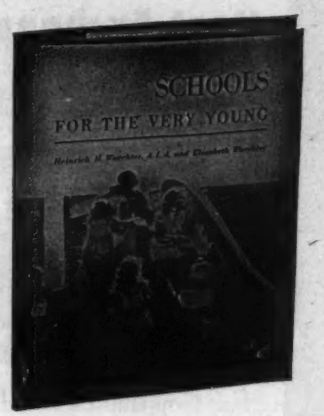
GRAPHIS AGAIN

Graphis Annual — '55/56. Edited by Walter Herdeg & Charles Rosner. Graphis Press (Zurich) 1955. 207 pp, illus. $12.50. *American distributors: Hastings House, New York*

The new Graphis once again attractively presents the best in posters, book jackets, Christmas cards, trademarks and other graphic presentations from the world over.

Schools for the Very Young

by HEINRICH H. WAECHTER, A.I.A.
and ELISABETH WAECHTER



THOUGH many volumes have been written about school design, "Schools for the Very Young" is — so far as we know — the first in which an architect and a child educator have collaborated to provide an up-to-date treatise on the requirements of the particular type of school demanded for the proper training of the very young child.

Beginning with a brief yet adequate historical and philosophical background, in which the development of the theory and practice of child education is discussed, the book goes on to describe the pre-school in action, noting the events of the school day and the corresponding environmental needs of the children and their teachers. Examples of existing pre-schools are presented with the critical comment. Detailed information is given concerning the space apportionments and arrangements called for by the activities peculiar to such institutions. Since one of the authors is especially concerned with city planning, the relation of the pre-school to its neighborhood and community is analyzed, and the many different types of pre-schools that have developed to meet special conditions are enumerated and explained.

The outdoor space and its proper equipment are thoroughly covered from the standpoint of a capable architect who has given much thought to the problem. Technological problems of construction, lighting, ventilation, mechanical equipment, etc., are scrutinized in the light of the most recent practice. A wealth of illustrations add both interest and information, and a selective bibliography will aid further study.

208 pages, 7⅛ x 10, stiff binding. Price $6.50.

Book Department, F. W. Dodge Corp.
119 West 40th Street, New York 18, N.Y.

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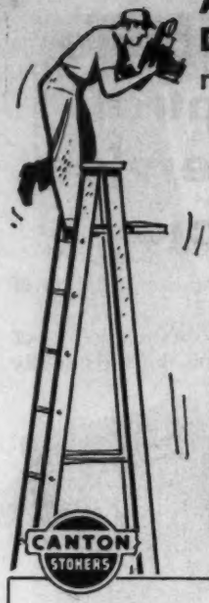

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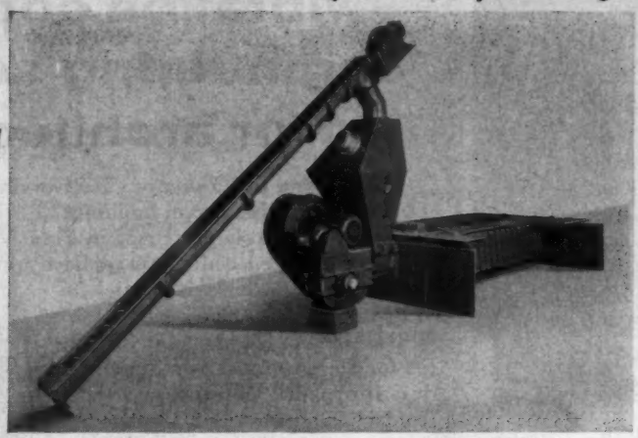

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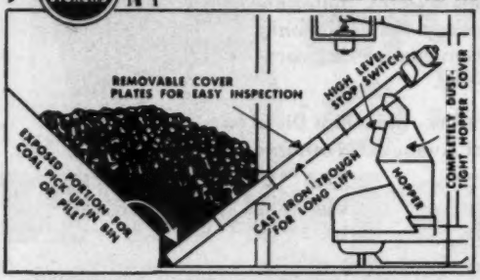
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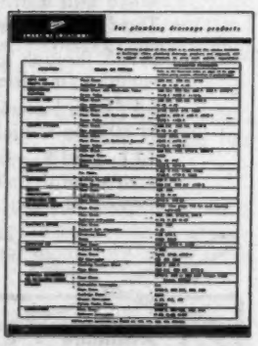

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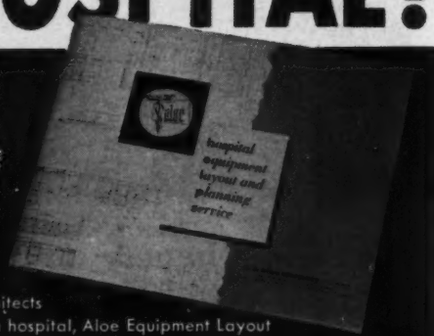

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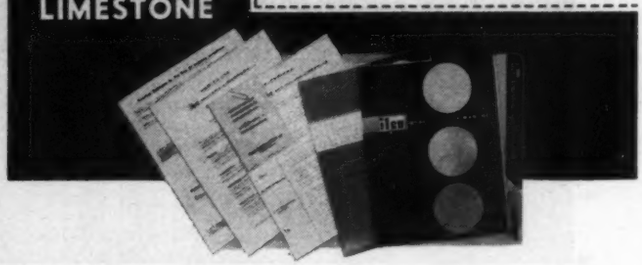

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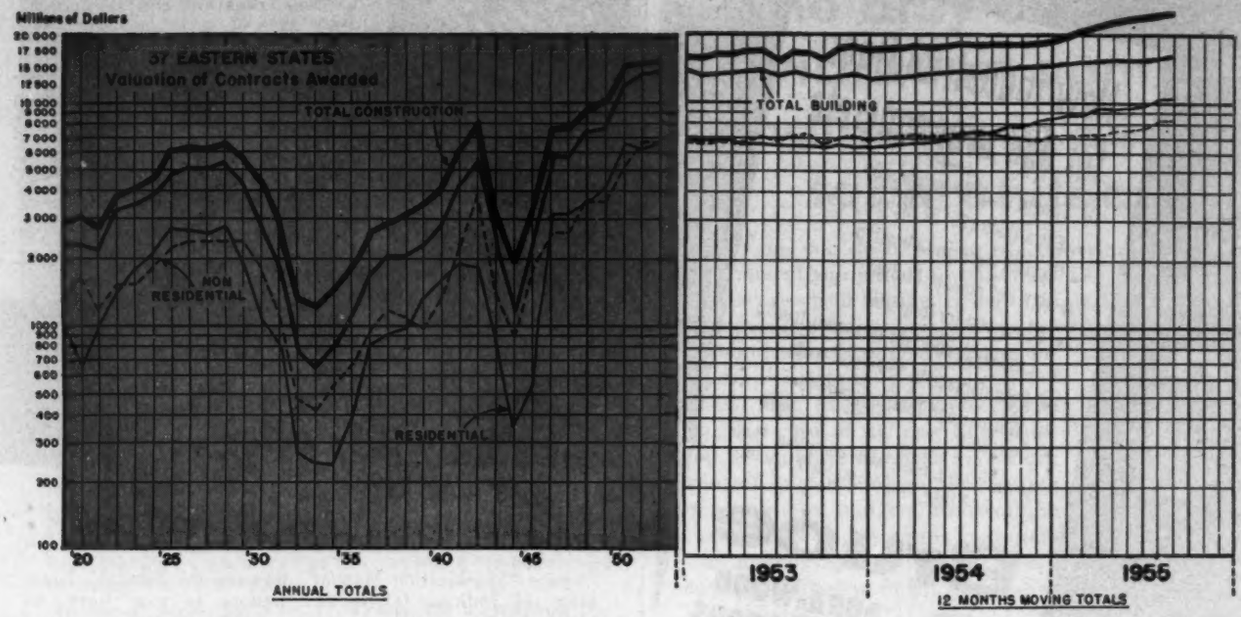


Charts by Dodge Statistical Research Service

RECORDS CONTINUE IN ALL CATEGORIES

As the latest figures on construction contracts awarded in the 37 states east of the Rockies were tallied, 1955 registered another record month in all three major F. W. Dodge categories — nonresidential, residential and utilities and public works — and the first eight months of the year also set new records in all categories. The August total of $1,894,841,000 was 20 per cent over the 1954 month, and the eight-months total of $16,130,149,000 was 27 per cent over the same period last year. Of the 15 classifications listed by Dodge, all but one — two-family houses — were up from the first eight months of 1954; increases ranged from 71 per cent for hotels to three per cent for the educational and science category (which includes schools). Other increases: public buildings, 59 per cent; manufacturing buildings, 49 per cent; commercial, 34 per cent; social and recreational, 20 per cent; religious, 19 per cent; hospital and institutional, 11 per cent; one-family dwellings — for sale or rent, 39 per cent, for owner occupancy, 23 per cent; apartments, 16 per cent. Top nonresidential types for eight months of 1955 by dollar volume: commercial ($1,580,897,000); educational and science ($1,427,236,000); manufacturing ($1,165,833,000).

Source: F. W. Dodge Corporation

SCHOOL * AND COLLEGE BUILDING

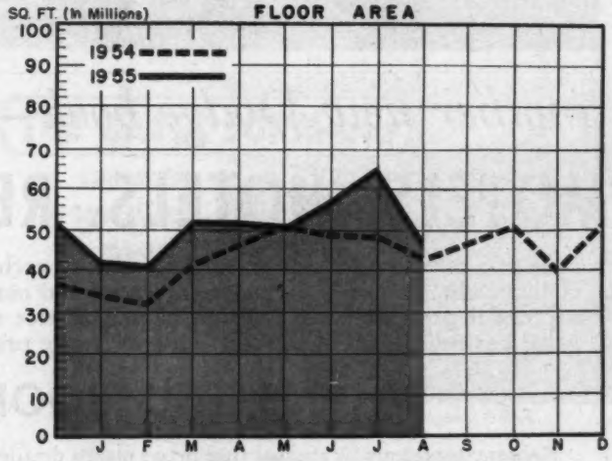
Contracts Awarded—37 Eastern States

Valuation (in thousands of dollars)

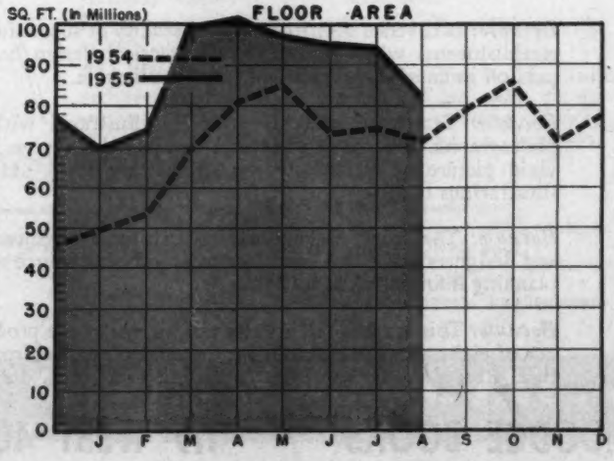
Region	8 months 1954	8 months 1955	% change
New England	90,686	95,476	+ 5.3
Metro. New York	128,059	127,361	− .6
Upstate New York	84,626	76,816	− 9.2
Middle Atlantic	160,666	140,970	−12.3
Southeastern	154,597	157,206	+ 1.7
Pittsburgh	54,684	49,288	− 9.9
Cleveland	64,523	92,928	+44.0
Cincinnati	39,098	36,082	− 7.7
Southern Michigan	76,408	100,881	+32.0
Chicago	160,766	176,969	+10.1
St. Louis	60,554	60,874	+ .5
New Orleans	29,645	31,338	+ 5.7
Minneapolis	52,265	61,297	+17.3
Kansas City	66,139	54,637	−17.4
Texas	68,358	68,944	+ .9
37-states totals	1,291,074	1,331,067	+ 3.1

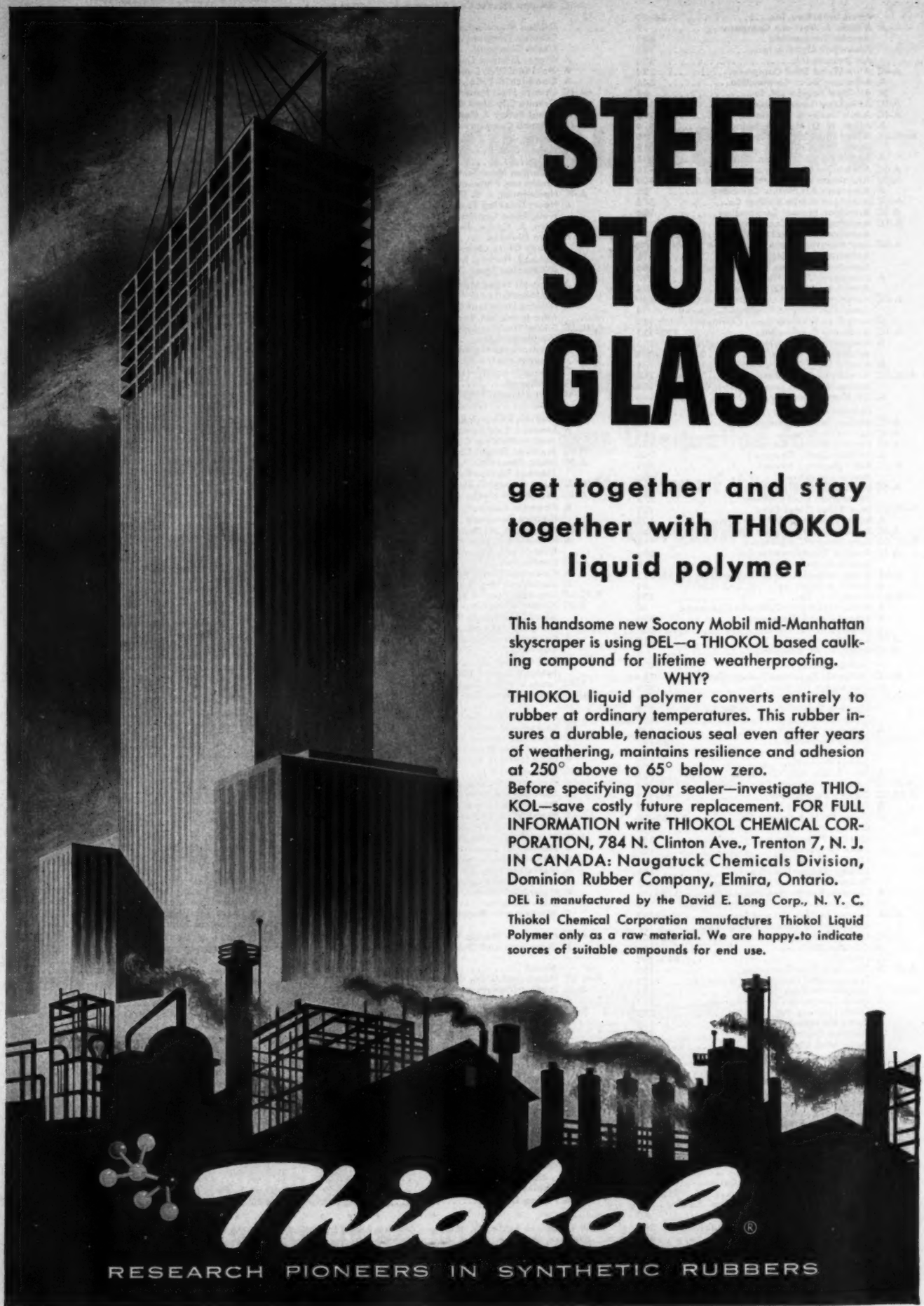
* Schools are the subject of Building Types No. 227 (pages 205–238).

NONRESIDENTIAL BUILDING (37 EASTERN STATES)



RESIDENTIAL BUILDING (37 EASTERN STATES)

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Catalogs of the firms listed below are available in the 1955 Sweet's Catalog Files as follows: (A) Architectural File (green), (IC) Industrial Construction File (blue), (LC) Light Construction File (yellow)

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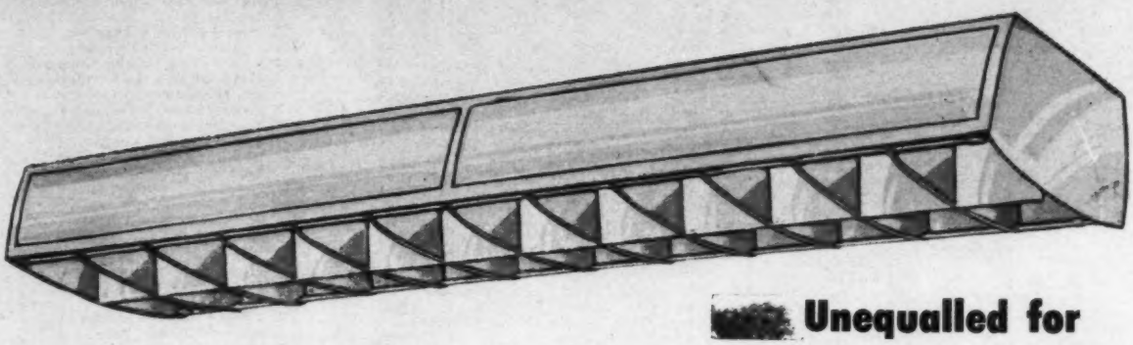

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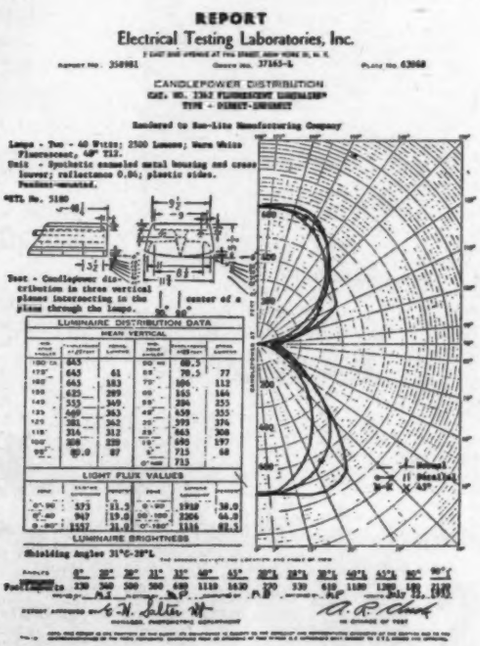
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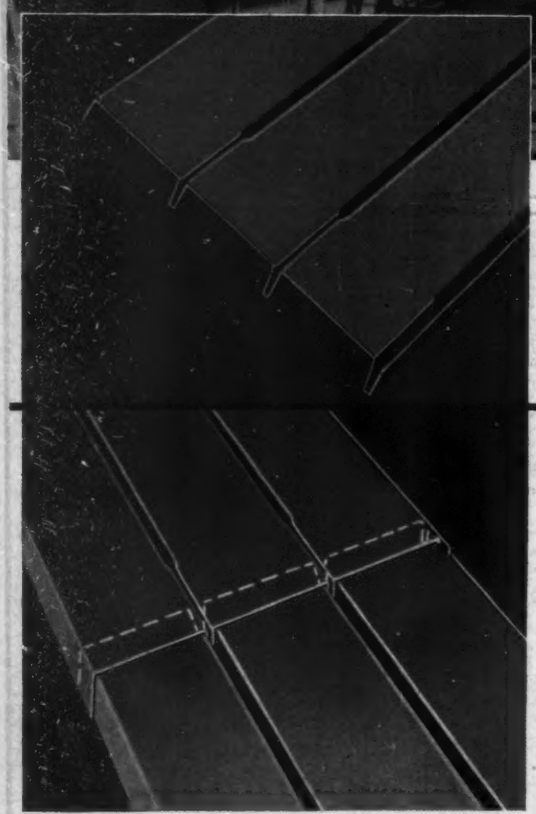
LIGHT FLUX VALUES
LUMINAIRE BRIGHTNESS



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